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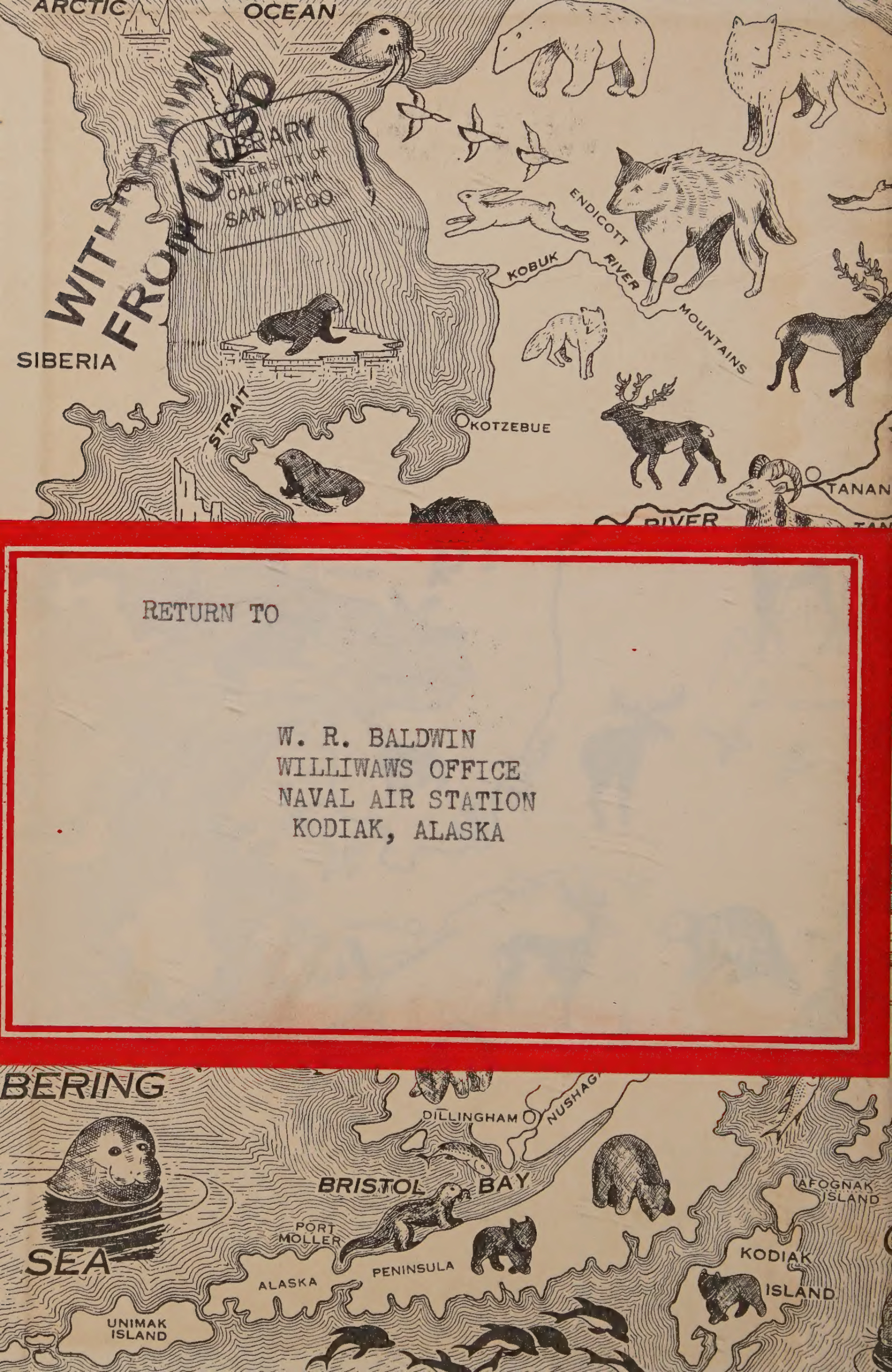
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A GUIDE TO
ALASKA
LAST AMERICAN FRONTIER

THE MACMILLAN COMPANY
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TORONTO

AMERICAN GUIDE SERIES

A GUIDE TO

ALASKA

LAST AMERICAN FRONTIER

by

MERLE COLBY

Federal Writers' Project

Illustrated

John W. Troy, Governor of Alaska, Sponsor

NEW YORK
THE MACMILLAN COMPANY
1942

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JOHN W. TROY

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FOREWORD

Scarcely more than a generation ago, well within the memory of many living Alaskans, the news was flashed in 1897 over telegraph wires that the steamer *Portland* had arrived in Seattle with "a ton of gold." Immediately a feverish interest was awakened in a little-known and still largely unexplored possession of the United States—Alaska. Names made familiar during the days that followed—Klondike, Chilkoot Pass, Yukon Trail, Nome Beach—and the exploits of those connected with them—are familiar to every school child and have passed into the written and unwritten folklore of the nation.

Even more important, and certainly no less dramatic, is the less-known Alaska of today—the Alaska of graveled automobile roads, of airplanes, used as casually by Alaskans as are taxis in continental United States, of giant gold dredges, of great fishing fleets, of farms with the latest in modern equipment, of homes set in frames of flowers and surrounded with vegetable gardens, of large shops, theaters, churches, schools, clubs, newspapers, and America's farthest-north university. Alaska may be the United States' "last frontier," but in its application of tomorrow's techniques to present-day mining and agriculture, in its revolutionary use of air transportation, in the energy and inventiveness of its citizens, Alaska deserves no less the name of the United States' "foremost frontier." Readers with vague schoolroom ideas of Alaska as a frozen land of ice and snow, the principal occupations of whose inhabitants are panning gold and hunting bear, may, as they turn these pages, find themselves deprived of many cherished illusions, but they will be compensated with some of the most significant episodes in the stirring story of America.

I am happy to sponsor this volume, in the hope that it not only will bring to residents of continental United States a renewed interest in their fellow-Americans of Alaska, but will encourage them to see with their own eyes Alaska's physical grandeur and its hardly less remarkable technological development. The selection of the subject matter, however, and the editing and arrangement of material are the sole responsibility of the writer selected for this task by the Federal Writers' Project of the Works Progress Administration.

John W. Troy
Governor of Alaska

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PREFACE

The best way to know Alaska is to spend a lifetime there. The next best is to experience the return of the seasons there. The year begins, according to the Tlingit Indian calendar, in the latter part of August, when birds come down from the mountains and animals begin to prepare their winter dens. There may be heat prostrations in Fairbanks, but a few miles eastward along Steese Highway the caribou on Eagle Summit sniff at the first flakes of snow and begin to drift down into the valleys. In Bristol Bay, according to the white man's simpler calendar, the first season—fishing time—is over, the midseason—play time—is at its height, and the last season—trapping time—is not yet at hand. Frost comes one morning to the vegetable garden, placer miners work feverishly to make their winter grubstakes, Matanuska farmers harvest their crops, and giant squash and potatoes are on view at district fairs. September, the Small Moon, begins when fish and berries fail. Then comes the Big Moon, October, when snow creeps down the mountains, fur animals put on thicker coats, and trappers lay out their lines. In November, the Snow Moon, the shallow waters of Bristol Bay freeze, Nome and Barrow are icebound, and planes discard wheels for skis. Soon comes the silence of December, when from the heights above Fairbanks the hunter, eating his midday meal, sees a white plume over the whistle of the Northern Commercial Company and long seconds later hears the thin shriek of noon; when the trapper in his cabin lays a batch of freshmade doughnuts on the shelf above the stove and they immediately freeze; when automobile roads are drifted high and the snowplow whirrs along the Alaska Railroad; when dogs mush ahead of the sleds of Eskimo and Athapascan drivers, and planes can land anywhere; when to sweat on a lonely trail is to freeze and die. December is the Mothers' Moon, when man, perpetually born out of season, shivers in his house, but every land and water animal, warm in its mother's womb, begins to grow hair. In January, the Goose Moon, the geese look northward and their mentor the sun actually starts on his return journey, while across the northern sky the aurora borealis marches with banners. In February, the Bear Moon, the sleeping black bear turns over on his other side. March is the Sea Flower Moon, when all things under the sea begin to grow; April, the Moon of Real Flowering, when plants on the earth begin to show life. May is the Hatching Moon. June is the Salmon Moon, when Caesar's dancing fish return from thousand-mile journeys to spawn, each in the fresh-water stream of its birth, and Indian women dip spruce branches in the streams and lift them out laden with Alaska caviar. July is the Moon of Birth, not only for animals but for towns—tent cities are born beside a mound of gold-bearing gravel or a platinum mountain, and ghost villages come back to life; prospectors take to the hills, the air is full of the clatter of dredges, the shriek of sawed timber, the putter of fishing boats; a fleet of antiquated oceanliners carrying fishermen anchors in Bristol Bay; harpooners hunt the whale; airplane motors roar endlessly as all Alaska hurries through the sky; and hordes of "round-trippers" crowd the hotels and buy Haida carvings, Eskimo ivory, Tlingit totem poles, Aleut baskets. Last comes, in the first part of August, the thirteenth month, the Fattening Moon, when animals deposit fat in the banks under their skins and whites and Natives reckon up their silver dollars at the year's end.

The least satisfactory way of learning about Alaska is to read about it, gnawing one's way through a few of the more than 10,000 books about Alaska that have appeared in Russian, German, French, Spanish, and English since 1724, sampling random issues of the 227 newspapers that have at one time or another been printed there, wading through some of the 3,500 public documents issued by government agencies about the Territory.

But most people who want to know more about our last frontier compromise on a short summer trip to Alaska, taking along the best guidebook available. In these pages an attempt has been made to furnish that guide. "Great is the power of the guidebook maker, however ignorant," wrote John Muir in his diary during a trip to Alaska in 1890, explaining that most travelers see only what they are told to see. He might have added that guidebooks fall into two classes: the didactic guide that leads the traveler firmly by the hand from each point of interest to the next, chiding him solemnly for any deviation from the established route; and the discursive guide that enlivens the journey with an unpremeditated hop, skip, or jump, in the hope that the reader will occasionally lift his eyes from its pages to look about for himself. In the present volume the formal guidebook pattern has been followed whenever it has seemed to suit the convenience of the traveler, but an attempt has been made not only to describe points of interest along well-established routes, but to portray for the general reader something of the history, heritage, and humor that is Alaska's own.

The first section of this book, "Preliminary Information," is designed to answer questions of immediate concern to the traveler, as well as to supply condensed general information about subjects treated in greater detail elsewhere. "Popular Errors" attempts to correct misconceptions common among people who have not visited the north. "The Six Alaskas" orients the visitor among the main physical and political divisions of the country. "Tours for Round-Trippers" describes the main tourist routes.

Part I: "The Great Land" is intended to serve as a general introduction to the Territory and its people.

Part II: "The Last Frontier" describes in detail major regions, towns, and communities, and is so arranged that a traveler making one of the usual tours (see "Tours for Round-Trippers") may use these chapters as a guide over his route. Description and information too detailed to be included in "Preliminary Information" or in Part I will be found under its locality. (Consult the index.) In the pages preceding the index will be found an acknowledgment of sources consulted and a recommended reading list of books about Alaska.

The reader should note that trips are planned primarily for the summer, the season in which most visitors travel in Alaska. Population figures, unless otherwise indicated, are those of the Fifteenth (1930) United States Census. Figures later than the fifteenth census are estimates. Temperatures are Fahrenheit. Altitudes are indicated only where significant. The abbreviation *p.o.* means that the locality had a post office in 1938, and *m.* can mean nothing but mile or miles.

Among the hundreds of organizations, agencies, and individuals who have furnished information or assistance in connection with the preparation of this guide should be mentioned John W. Troy, governor of Alaska; Anthony J. Dimond, Alaska delegate to the Congress; Harry B. Watson, secretary to the governor; Col. O. F. Ohlson, general manager of the Alaska Railroad; W. Harold Snell, assistant general manager; J. G. Blanchard, general passenger agent of the White Pass and Yukon Route; Dr. A. C. Bunnell, president of the University of Alaska; the Rev. A. P. Kashevaroff, curator of the Territorial Museum; Homer W. Jewell, assistant executive officer of the Alaska Game Commission; Hal Gould and Florence Tobin of Ketchikan; James Wickersham, author of the monumental *Bibliography of Alaskan Literature;* the Territorial Chamber of Commerce and many secretaries of local chambers; the editors of the *Alaska Sportsman, Anchorage Daily Times, Farthest North Collegian, Fairbanks Daily News-Miner, Alaska Empire, Alaska Press, Alaska Miner, Alaska Labor Dispatch, Cordova Daily Times, Ketchikan-Alaska Chronicle, Alaska Fishing News, Nome Nugget, Petersburg Press, Seward Gateway, Valdez Miner, Valley Settler,* and *Wrangell Sentinel.* Many agencies and individuals outside Alaska should be mentioned, among whom are Dr. Ernest Gruening, chief of the Division of Territories and Island Possessions, Department of the Interior, and Paul W. Gordon of the Alaska Division, both of whom kindly read this book and furnished useful suggestions; Dr. Carl L. Alsberg, of the Alaska Resources Committee, who has permitted the use, often verbatim, of staff reports submitted to his committee; Charles W. Eliot, 2d, executive officer of the National Resources Committee; Henry B. Collins, Jr., and Dr. J. R. Swanton of the Bureau of American Ethnology; Carl Lomen of Lomen Brothers; Dr. Jeannette Nichols; and Dr. Vilhjalmur Stefansson. The staff of the New York Public Library cheerfully made available its collection of books, prints, and periodicals relating to Alaska.

Many other persons both in and out of Alaska have furnished in formation and assistance, as have traders, schoolteachers, priests, miners, roadhouse proprietors, postmasters, and other Alaskans both white and Native. The Alaska Steamship Company permitted the use of copyright photographs and drawings, individually credited, and has supplied much information of value to tourists. Thanks are due the above and hundreds more who assisted in the collection of facts; the arrangement and any interpretation of these should not be construed as the opinions of the Works Progress Administration, the sponsor of this volume, or any Federal or Territorial agency, but are the sole responsibility of the author.

Alaska is perhaps the most rapidly changing section of the United States, and no guidebook can hope to keep up with it. Settlements that this year are small camps may next year be roaring boom towns or be already fading into ghost villages. So widely has our knowledge of the Territory been extended in the present generation that the Alaska described in Eliza Scidmore's excellent guide, published almost forty years ago, occupies scarcely more than a single chapter in the present volume. Even the most recent guide, the last edition of which appeared in 1922, bears little relation to present-day Alaska.

In the process of rechecking factual statements, information later than that of the fifteenth census and facts likely to be of interest to the visitor were requested from each of the towns, villages, and settlements listed in the official Postal Guide. Most of these responded helpfully, although occasionally there would arrive such a letter as the following: "This place is nothing but a cannery. A tourist would have a hard time getting a cup of coffee." Because of the remoteness of many places described and the difficulty of checking thousands of factual statements at a distance, some errors have undoubtedly slipped through. Alaskans and others are urged to point out to the author, in care of the publisher, errors of omission or commission, that these may be corrected in succeeding editions.

MERLE COLBY

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McKINLEY PARK
F. LO PINTO

PRELIMINARY INFORMATION

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Clothing
Communication
How to Reach Alaska
Hunting and Fishing
Living Expenses
The Long Day and the Long Night
Money
Movies, Bowling Alleys, Cafés, Taverns
Museums and Libraries
National Park and Monuments
Stores, Trading Posts, Curio Shops
Time
Transportation
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Vocabulary of Alaska Terms

ACCOMMODATIONS. In the larger towns hotels are excellently appointed, comfortable, and reasonable in price. Single rooms without bath range from $1 to $2.50 per day, single rooms with bath from $2.50 to $6.

In smaller towns and villages and along the trails hotels are replaced by "roadhouses," with none of the connotations of the term in the States. Alaska roadhouses are country lodges, built of logs or sawed timbers, usually of two stories. The first story contains the dining and living rooms, the second story the bedrooms and baths. The comparative luxury of roadhouses in some remote districts is startling. In new or remote settlements a roadhouse is sometimes replaced by a bunkhouse, consisting of tiers of bunks wedged on top of one another in a tent or cabin. If the settlement is too new or too remote for even a bunkhouse, shelter may usually be had in the local jail and food secured at the trading post. For women the problem of shelter overnight in remote districts may be a delicate one—the hospitality of the local schoolteacher sometimes affords a solution.

Remote trails are dotted with shelter cabins containing food and firewood. Any traveler may make use of one. He must leave it in good order, with firewood and kindling for the next arrival—in the winter, the life of the next arrival may depend upon the speed with which he can build a fire. It is customary to remain in a shelter cabin not longer than three days.

Restaurants are for the most part simple and utilitarian, with one long lunch counter faced by a few tables protected by booths. Food is plain, hearty, and far too ample for anyone not doing hard physical work. As everybody works in Alaska, no allowance is made for delicate or jaded appetites. Occasionally skipping a meal, or replacing a regular meal with fruits, is recommended to the chechakho. Few restaurants supply fresh cream for coffee—indeed, indignant complaints would arise from outraged sourdoughs if fresh cream were substituted for the familiar can of condensed milk on restaurant counters. A cup of coffee costs from ten to fifteen cents, but no charge is made for additional cups.

Tips, save on shipboard, are rarely solicited, and are never given except for service performed.

CLOTHING. The traveler will need no extra clothing in Alaska during the summer months. A raincoat and a light sweater will be found useful. Voyages "to westward," or long trips into the Interior will be more comfortable by the purchase in Alaska of the summer uniform of fisherman, miner, prospector, and official—ankle and elbowlength cotton underwear, khaki jacket and breeches of green forestry cloth, high socks of mixed cotton and wool, leather boots or rubber and leather shoepacs (known in the States as Maine hunting boots), cotton or light-wool shirts, a broad-brimmed hat, and, during the worst of the mosquito season (June-July) a head net and a pair of cotton monkeyface gloves. This dress, exceedingly practical and comfortable, is worn by men and women alike, and can be purchased at any store or trading post in Alaska. If shoepacs are worn, care should be taken to dry out at night the inner felt, or wool, soles placed inside the shoes to absorb moisture.

In the severe climate of the north and the Interior during winter, clothing must give enough warmth without causing the wearer to perspire. Profuse sweating or sudden drenching at a low temperature on a lonely trail may prove fatal. The winter dress for the severer weather in these sections is of wool, but is only slightly heavier than in summer. As an overgarment, a fur or woolen parka (pronounced *parky*) is worn, its hood edged with wolf or wolverene fur—the only furs upon which the breath will not condense into frost. Footgear, usually Native moccasins or the high-topped fur boots called mukluks, varies according to the terrain, the state of the weather, and the amount of walking done. A complete change of clothing in case of sweating or sudden drenching is essential for winter use.

Travelers in wild country carry bedrolls or sleeping bags, which are made in both winter and summer weights. Twin bedrolls are a recent inventive triumph, and may be used separately or zipped together.

COMMUNICATION

MAIL. Domestic rates of postage in the United States apply to matter mailed to, from, or within Alaska. A sure way to annoy an Alaskan is to send him a letter under a five-cent stamp, as if he lived in a foreign country. On parcel-post packages the eighth zone rate is charged between any two points in Alaska as well as between points in Alaska and continental United States. Special rates and regulations apply to the mailing of gold and of furs.

Mail for Alaska is dispatched from Seattle, and even air mail goes up by boat. Experimental air-mail runs from Seattle to Juneau were being made during 1938 by the Pacific Alaska Airways. During the summer all classes of mail are accepted for all points in Alaska. During the winter season (October-May) first-class mail is given preference over other classes to points not located on, or adjacent to, railroads. In winter ordinary first-class mail is often carried by plane, reaching its destination more quickly than in summer.

TELEGRAPH, TELEPHONE, RADIO. The crossed flags of the Army Signal Corps painted on a metal sign indicate to travelers the nearest telegraph office. The Alaska Communications System (the official title of this service) accepts commercial messages, with the usual classes of service: night and day letters, money orders, etc. The southern terminus of this system is at Seattle.

The Navy Department maintains one radio station at Dutch Harbor, Unalaska Island. The Signal Corps offers radio telephone service between Seattle and Juneau, with telephone connections throughout continental United States.

The Alaska Railroad operates a telegraph and telephone system over the whole length of its main and branch lines.

It is not as yet possible for widely distant sections of Alaska to communicate commercially with one another, or with the States, by telephone. Recent successful experiments in radio telephony point to a time not far distant when all parts of Alaska will be linked with one another and with the States by radio telephone.

There are no coin boxes on Alaska telephones, and stores and hotels usually make no charge for telephone calls within the vicinity.

There are four commercial broadcasting stations in Alaska: KGBU (900 kilocycles, 500 watts) at Ketchikan; KINY (1310 kilocycles, 100 watts) at Juneau; KFQD (780 kilocycles, 250 watts) at Anchorage; and KFAR (610 kilocycles, 1,000 watts) at Fairbanks; all featuring mostly recorded programs. These stations broadcast without charge emergency messages telegraphed to them for points not served by telegraph. Musical programs are frequently interrupted by such messages as PLEASE INFORM JOHN NEILSEN PROSPECTING SOMEWHERE ON THE UPPER KOYOKUK IT'S A GIRL, or RESIDENTS OF LOWER KUSKOKWIM WATCH OUT FOR THE BODIES OF TWO MEN DROWNED NEAR ANIAK.

HOW TO REACH ALASKA. Three steamship companies provide transportation to Alaska from Seattle, and at the height of the summer season several boats a week make their departure from this port. Two Canadian companies operate steamships from Vancouver. Sailings are weekly or semiweekly during the winter months. The boats are usually crowded, and reservations should be made well in advance.

The Alaska Steamship Company operates a large fleet of vessels (freight and passenger) during the entire year, to southeastern and south central Alaska from Seattle. It also furnishes passenger and freight service to Bering Sea ports, direct from Seattle, during the summer. Irregular service is available between Seward, Alaska, and Kenai Peninsula, Kodiak, ports of the Alaska Peninsula, the Aleutian Islands, and Bristol Bay.

The Northland Transportation Company offers year-round service to southeastern Alaska from Seattle.

The Alaska Transportation Company operates vessels to southeastern Alaska from Seattle.

The Canadian Pacific Railway operates steamers with passenger and freight service during the entire year to southeastern Alaska from Vancouver and Victoria.

The Canadian National Railway operates steamers in summer only to southeastern Alaska from Vancouver and Victoria. The Canadian Pacific and Canadian National vessels are the only ones that stop at British Columbia ports.

Occasional planes operate between Seattle, Vancouver, and Juneau (consult local airlines).

A motor road to Alaska—the International Highway—already extends as far north as Hazelton, British Columbia, but probably will not be completed for some years to come.

HUNTING

Licenses. General hunting and trapping license for nonresidents of Alaska who are citizens of the United States: game animals, $50; game birds, $10. Aliens, $100. No additional charge for trophies taken out of Alaska.

A copy of "Regulations Relating to Game, Land Fur Animals and Birds in Alaska" may be secured from the Superintendent of Documents, Washington, D.C., for 10 cents. (Do not send stamps.)

SUMMARY OF ALASKA GAME LAWS

(but consult current regulations)

Game Animals	Limit per Season (nonresident)	Open Season (dates inclusive)
Moose, bulls, except yearlings and calves	1	Sept. 1 to Dec. 31
Caribou	Alaska Peninsula, 1 Elsewhere, 2	North of Yukon: no closed season South of Yukon: Aug. 20 to Dec. 31
Deer, males, with horns not less than 3 inches above skull	East of longitude 138°, southeastern Alaska only, 3	Aug. 20 to Nov. 15
	West of longitude 138°, Prince William Sound drainage only, except Hawkins and Knight islands, 1	Sept. 20 to Sept. 30
Mountain sheep (except ewes and lambs)	Kenai Peninsula, 1 Elsewhere, 2	Aug. 20 to Dec. 31
Mountain goat (except kids)	2	Aug. 20 to Dec. 31
Bear (large brown and grizzly)	Admiralty Island, 1 Elsewhere, 2	Sept. 1 to June 20
Bear (black and polar)	No limit	No closed season
Game Birds		
Grouse and ptarmigan	15 grouse and 15 ptarmigan a day, but not more than 25 in aggregate a day	Sept. 1 to Feb. 28

No nonresident shall take game animals or black or polar bears for sport or for trophies in Alaska unless accompanied by a registered guide. (A list of licensed guides may be obtained from the Alaska Game Commission, Juneau.)

No nonresident shall pursue or disturb a large brown or grizzly bear for the purpose of photographing such animal unless accompanied by a registered guide.

Taking game by shooting from, on, or across any public highway, or within 33 feet of the center line of any public highway in the first or third judicial divisions, is prohibited.

No game animal or game bird or fur-bearing animal may be taken at any time in Mt. McKinley National Park, Katmai National Monument, Glacier Bay National Monument, on Kruzof and the Partofshikof islands, and in certain other closed areas. In Alaska bird and wild life refuges, wild animals and birds are specially protected.

Notes Concerning Game Animals. The Alaska large brown bear, or Kodiak, is the largest carnivorous animal on earth. This huge beast and its close cousin, the grizzly, are represented in Alaska by several species. The Alaska black bear is represented by three subspecies, with various color phases. The Kenai black bear found on Kenai Peninsula is an extremely large, intensely black animal. Skins exceeding eight feet in length have been taken. The common black bear is found throughout the Territory, and many shaded brown and cinnamon colored individuals occur among members of a single family. The rare blue glacier bear living near the great ice masses is considered to be a handsome color phase of the black bear. The Polar bear inhabits the Arctic ice pack.

The Alaska moose is much larger and blacker than the common moose—a full-grown bull will stand seven feet high at the shoulders and weigh more than three-fourths of a ton. Its wide palmated antlers develop spreads of six feet or more and are so heavy that when attached to the skull and cape they can hardly be lifted by a man.

The pure white mountain sheep often makes itself plainly visible among the high mountain peaks, but is wary and tests the sportsman's skill and stamina. The mountain goat lives among the coastal ranges, preferring the saline air there. These white-bearded animals sometimes exceed three hundred pounds in weight.

Alaska caribou, the most abundant of game animals in the Territory, fall into two rather distinct types: the mountain caribou and the barren ground caribou. The first type is represented by two subvarieties: the McGuire caribou, specimens of which have been taken weighing as much as seven hundred pounds, and the Osborne caribou, living near the Yukon boundary, standing as much as five feet high at the shoulders and with rich clove-brown upper parts and silvery flanks. The barren ground caribou, related to the reindeer, is smaller in size, paler in color, and with lighter antlers. Both sexes of caribou have antlers. All caribou are short-sighted and much less wary than the moose.

There are no true American deer in Alaska except the Sitka deer, common in the southeastern coast district from the vicinity of Sitka southward. It is a variety of the Columbia blacktail, and ordinary bucks weigh rather less than one hundred pounds.

The timber wolf is one of the largest in America, and specimens are variously colored, from grizzled white to coal black. They are wide-ranging and exceedingly destructive, and the hunter who kills one (bounty $20) has done a service to himself and other sportsmen.

FISHING

No license is required of anglers, and there are no bag limits, no size limits, and no closed seasons. The Territory actually pays a bounty in certain areas on one variety of trout—the Dolly Varden, which eats salmon eggs. Only one regulation need concern the angler—the one making it unlawful to take fish for three years after liberation of stock; but when 33-inch, 15-pound rainbow trout are to be had, no fisherman in his senses would go after mere fingerlings.

The cutthroat trout and the Dolly Varden trout are by far the best known and most numerous of the freshwater fish in the coastal streams of southeastern and southern Alaska. The rainbow trout and the steelhead, or salmon, trout are plentiful in certain areas. In addition to these native species eastern brook trout have been planted in lakes and coastal streams separated from the sea by impassable barriers, and will one day become important game fish.

In the streams and lakes of the Interior are numerous lake trout, known to reach a length of several feet and a weight of 60 pounds; specimens weighing 35 pounds are not uncommon. Grayling, reaching a length of 20 inches and attaining a weight of four pounds, are found in the clear swift streams of the Interior. Salmon eggs are the usual bait in fresh water, but other bait, spinners and flies, are often used.

Among salt-water game fish are the chinook or king salmon, which reaches a maximum weight of nearly 100 pounds, with the average about 20 pounds. The silver, or coho, salmon reaches a weight of 30 pounds, but averages about eight pounds. Both are found in coastal salt water from the southeast to the southwest. They are gamy, fighting fish and will take spoons, hooks baited with herring, lures of various kinds, but not flies. They do not strike at the surface, as a rule, but beneath it. White surf fish or viviparous perch, numerous species of rockfish or rock bass, and rock or kelp cod are a few of the better known kinds of other marine game fish.

Strip fishing for salmon is very popular around Juneau, where an annual strip-fishing contest is held each July. The angler casts and trolls until the fish are located, usually in 30 to 40 feet of water but occasionally in as much as 70 to 80 feet; then the boat is anchored and the fishing is conducted entirely by casting a hook baited with herring. Entries must be salmon weighing 15 pounds or over. The fishing grounds are easily accessible by car and boat from Juneau.

Most towns have stores well stocked with fishing equipment. Small launches may be chartered for fishing from all points along the coast, and there are excellent fishing grounds along the Richardson Highway and the Alaska Railroad. Airplanes are very popular among anglers, since they permit a fishing party to leave town in the early morning, enjoy a day fishing in a lake or stream where perhaps no white man has ever fished before, and return the same evening. Where the fishing grounds are so remote from civilization that there is no hunting lodge near by, anglers sit on the pontoons of the plane and cast from there. To the pilot, as is fitting, is reserved the right to straddle the propeller shaft and to fish from this honorable post.

Henry O'Malley, former United States commissioner of fisheries, has written a lively and informative pamphlet, "Sport Fishing in Alaska," which may be secured by sending 5 cents (do not send stamps) to the Superintendent of Documents, Washington, D.C. Ask for Fishery Circular No. 13, issued January 1933, Bureau of Fisheries.

LIVING EXPENSES. Living expenses for travelers, exclusive of transportation, range from $6 to $15 a day. In general, food is high, rooms are reasonable, and travel is expensive. Prices mount in direct ratio to the distance from the main-traveled routes; thus the same meal cooked from the same ingredients, identically served, may vary in price from 75 cents to $1.50, depending upon distance and the difficulty of transporting food and fuel. Food is charged for by the meal in many roadhouses, regardless of the amount ordered.

A saving in money as well as time may sometimes be made by air travel. Thus a trip requiring two weeks to make by water in summer or dog team in winter may frequently be made at no greater cost in four or five hours by plane.

Travel agencies offer a variety of all-expense tours, which afford considerable saving, although they somewhat limit the traveler's independence of movement. A typical round trip from Seattle to the

Interior, taking about 19 days, costs about $250 for transportation and meals.

An income of $2500 in Alaska is roughly equivalent in buying power to $1500 in the States. Wages in Alaska are correspondingly high.

THE LONG DAY AND THE LONG NIGHT. So much has been written about the long day and the long night of the Arctic that this phenomenon is often thought of as extending even to such localities as Juneau, 600 miles south of the Arctic Circle. In southeastern Alaska the days are long in summer and short in winter—as they are in Stockholm, Boston, and Chicago. This phenomenon grows increasingly apparent as one journeys northward, until at Fairbanks and Nome midsummer nights are almost entirely light, and midwinter days are almost entirely dark. At Point Barrow this condition is even more apparent.

Even in the north, midsummer nights are dusky rather than brightly alight, and midwinter days are gloomy but never pitch dark. In the vicinity of Fairbanks in midsummer the sun, like Charles II, takes an unconscionable time in dying, the sunset remaining brilliant until ten or eleven o'clock at night, and dawn breaks rather unexpectedly at two A.M., or earlier. At Fairbanks a midnight ball game is played every 21st of June, but in order to view the midnight sun it is necessary to travel north of Fairbanks 120 miles to the Arctic Circle. The midnight sun is best seen from a plane, as the mountain ranges north of Fairbanks tend to obscure it. The long midsummer day is rather wearing on Alaskan nerves, however, and after summer-long, midnight berry-picking or swimming excursions, most residents of northern Alaska are glad to see the days shortening again.

The long night is not so black as it has been painted, for what with the snow on the ground, and the moon and the northern lights in the sky, winter nights are often almost as bright as summer ones. This was strikingly illustrated during the search for the lost Russian flyers in the Arctic in 1937. Almost constant fog conditions prevented any thorough search for the flyers during the summer, even with so many available hours of daylight. In the fall, however, in spite of there being almost no daylight, the moon and the snow provided sufficient light in an atmosphere clear of fog to make a thorough search possible.

MONEY. The 5-cent piece is the lowest monetary unit in Alaska; in the remote interior, the 25-cent piece (*two bits*). In the latter case, this does not mean that the lowest price of any article is 25 cents, but merely that a total purchase must amount to a multiple of 25 cents. Pennies are almost unknown, and in post offices the clerk will usually make change in one-cent stamps. Prices such as 39 cents and $1.98 are unheard of. Changing a large bill often results, as elsewhere in the West, in a pocketful of silver dollars. With the passing of individual placer mining and the miner's poke, gold dust as a medium of exchange has almost vanished. Travelers' or express checks are accepted everywhere without question.

MOVIES, BOWLING ALLEYS, CAFÉS, AND TAVERNS. Even in remote districts the profile of Myrna Loy is familiar to every Native. In ports closed to navigation during the winter months, cans of film are stocked to last through the winter, and residents of these settlements by strolling through the trading-post warehouse and reading the labels on the cans may know in September what films they are to see in March. The show runs for two hours or less, consisting usually of a feature film and newsreel or cartoon. Once a week the proceedings are enlivened by "bank night," on which everybody in the audience hopes he will win from fifty to two hundred and fifty heavy silver dollars. Except in the larger towns, the theater seats are rows of hard benches, and as with other commodities in Alaska, the price of entertainment increases with the distance from means of transportation. When a Native goes to the movies he takes his entire family, including the baby born last week.

Men, women, and children are passionately fond of bowling, and many larger towns have excellently equipped-and-maintained bowling alleys. Pool competes with bowling, and many women in remote settlements are excellent pool players. Gambling machines, disguised as games of skill, are found in stores, bar rooms, trading posts, bowling alleys, hotel lobbies, restaurants, and pool rooms—almost everywhere except in churches and jails.

The sign *café* usually indicates a restaurant, where alcoholic liquors may or may not be served. Even in the taverns, however, liquor regulations prohibit any beverage stronger than beer or wine. Cocktails are occasionally served—horrible concoctions of sherry, claret, bordeaux, port, a twisted orange peel, and a dash of bitters. Patrons of bars sometimes attempt to violate the law by demanding a drink of "Ar'tic wine"—Alaskan for straight whiskey. Since only light beverages are served in restaurants and bars, "package stores" are on every street corner. (But consult current liquor laws.)

The ladies known as "Lou"—and by other names—still flourish in the larger towns. But the original Lou is now well past middle age. Assuming she was 18 years old when she took part in the Klondike gold rush, Lou was 21 during the rush at Nome, 23 in Fairbanks, 29 at Ruby, and 35 when gold was struck at Tolovana. In 1938 she celebrated her 59th birthday, and time is forcing respectability upon her. The gilt is gone from the gingerbread, and the glamour of "Lou" and her sisters has departed—if indeed it was ever there.

MUSEUMS AND LIBRARIES. The Alaska Historical Library and Museum, on the second floor of the Territorial Building in Juneau, contains relics from the days of the Russian occupation, other historical relics, and a remarkable collection of aboriginal weapons, utensils, implements, and artifacts. The Library consists of books relating to Alaska, many of them exceedingly rare. The Museum was created by act of Congress, June 6, 1900, and is supported from the fees paid by lawyers admitted to the bar and by notaries public. The librarian and curator is the Rev. A. P. Kashevaroff. (Open free, Mon.—Fri. 9-5; Sat. 9-1; occasionally at odd hours coinciding with the arrival of northbound passenger vessels.)

The Sheldon Jackson Museum at the Sheldon Jackson School in Sitka has a splendid collection of historical relics of the Russian occupation, most of them found in or about this early capital. It also contains a large collection of aboriginal artifacts, including many Eskimo-made, secured by Dr. Sheldon Jackson in his travels throughout the west and the Interior. (Open daily during school hours; adm. 25 cents.)

The University of Alaska at College maintains a museum which displays paleontological and mineral specimens, as well as Native craftwork, and a library. (Open free, daily during school hours.)

Most towns have public libraries, consisting mainly of fiction, periodicals, and newspapers; but no really inclusive collection of books relating to Alaska is available in any public library. As few Alaskans have leisure to read during the day, the public libraries are usually open only during certain week-day evenings and Saturday afternoon.

The most extensive collection of books, documents, and manuscripts relating to Alaska in the United States (not open to the public) is the private library of the Hon. James Wickersham of Juneau, author of the standard bibliography of literature relating to Alaska. He has been identified with the country for almost forty years.

NATIONAL PARK AND MONUMENTS. Alaska has one national park and four national monuments. Two of the latter are inaccessible by scheduled routes.

Mt. McKinley National Park (season June 10 to Sept. 15) is on the Alaska Railroad (Mt. McKinley Park Station), 348 miles from Seward and 123 miles from Fairbanks. In area 3,030 square miles, it contains the highest mountain in North America, Mt. McKinley, 20,300 feet. The park is divided by the Alaska Range. The eastern portion is made up of rolling hills and grassy valleys which afford pasture for immense herds of caribou. The western portion contains many high mountains and glaciers. Within the park boundaries are found grizzly bears, wolves, coyotes, moose, caribou, sheep, and fox in great numbers, as well as many smaller animals. There are 80 miles of graveled automobile road within the park.

Kasaan National Monument, reached by launch from Ketchikan, covers twenty-eight acres on the east side of Prince of Wales Island. It contains the ruins of the former Haida Indian village known as Old Kasaan—totem poles, grave houses, monuments, and portions of the original framework of buildings.

Sitka National Monument, a reservation of historical interest and great natural beauty, contains a remarkable collection of totem poles. It is within walking distance of the town of Sitka, in southeastern Alaska, a port of call for steamships from Seattle.

Glacier Bay National Monument is situated in southeastern Alaska near Juneau. In 1938 no regular steamship schedule included a visit to it. It could be visited only by chartering a launch or plane. Advantage may sometimes be taken of launch or plane trips to prospectors' camps in the area to see a portion of this region at low cost.

Katmai National Monument, on Shelikof Strait near the base of the Alaska Peninsula, in southwestern Alaska, contains the Valley of Ten Thousand Smokes and other remarkable volcanic phenomena. It is rarely visited by steamers, contains no roadhouses or trading posts, and is inaccessible to the average traveler.

STORES, TRADING POSTS, CURIO SHOPS. Alaska stores must, by reason of their comparative isolation, maintain large general stocks. The quality of merchandise is, on the whole, superior. The Alaskan is aware that transportation costs bring the price of a cheaply made article into the price-range of a better made one, and consequently exacts and receives the best for his money. Miners, fishermen, and others living in isolated districts buy almost entirely by brand name, and will not take chances with unfamiliar brands or products of unknown quality. Although the Alaskan frequently buys from mail-order houses, he prefers to see the article he is buying, and makes his purchases only from stores whose reputation he knows from personal experience. Because of the seasonal nature of employment, a great deal of business is done on credit—many Alaskans habitually purchase their winter "grubstake" this way, paying for it during the summer.

In isolated communities the trading post is to the community what the general store was to rural America. The trading posts are usually retail outlets of large trading companies such as the Northern Commercial Company and the Pacific Commercial Company. At many trading posts it is possible to purchase fine examples of Native craft—baskets, moccasins, mukluks, parkas, etc. In isolated communities the trading post sometimes operates a roadhouse and restaurant, contains the post office, and is the community center where residents gather for social intercourse and to exchange news.

Port towns and towns along the Alaska Railroad have excellent curio shops, most of them honestly operated by persons long familiar with Native arts and crafts who will not misrepresent their goods to tourists. On account of the high living costs in Alaska, Native-made curios are not cheap, and the tourist demand for cheap curios has resulted in heavy importation of Japanese-made ivory carvings and totem poles. The honest curio dealer, if he is forced by the demand to display Japanese-made curios, keeps them in separate cases, plainly labeled. The fining of a dealer who sold Japanese articles as "Native-made," defending his action on the ground that the Japanese are also natives—of Japan—had a salutary effect on other curio dealers. If before making any purchase of curios the traveler will spend a few hours examining examples of the Native arts in Chief Shakes' Community House at Wrangell, the Territorial Museum at Juneau, or the Sheldon Jackson Museum at Sitka, he will quickly learn to recognize worthy specimens of Native art in the shops. Some of the larger curio shops have for sale pieces which should be in museums, and which when sold cannot be replaced. The visitor might well purchase an example of Haida carving, a Haida or Tlingit carved totem or witch-doctor's rattle, a Chilkat dancing shawl or blanket, an Aleut basket, a piece of Eskimo-carved ivory, an Eskimo whalebone basket from Point Barrow, and perhaps a pair of hair-seal moccasins. Parkas and other articles of fur should be purchased only from established dealers, as purchasers otherwise run the risk of buying badly tanned furs or fur that is not prime. Recently a legal trade mark has been authorized and adopted for all Native made articles.

TIME. For practical purposes, the traveler need only remember that he should set his watch back one hour at Ketchikan, another hour at Seward, and another hour at Nome, or set it forward at the same rate when traveling in the opposite direction.

The time belts in Alaska have no identifying names, but are indicated by degrees of longitude. Fifteen degrees of longitude are equivalent to one hour of time. Thus 9 A.M. at Seattle (120°) is 8 A.M. at Ketchikan and Juneau (135°), 7 A.M. at Cordova, Valdez, Seward, and Fairbanks (150°), and 6 A.M. at Nome (165°). Hence such notations on time tables, as *Lv. Seattle Tues. 9 a.m. Pacific Standard Time, Ar. Juneau Fri. 9 a.m. 135°*.

The 180th meridian lies between the Andreanof and the Rat islands, among the Aleutian group. This is the meridian farthest west of Greenwich (180°), and strictly should be the point where Sunday becomes Saturday. As a matter of convenience, the international date line jogs west to take in the westernmost American possession, Attu Island, and east to include Siberia and the Big Diomede.

TRANSPORTATION

RAILROADS. The Alaska Railroad from Seward to Fairbanks, completed July 15, 1923, was built by the government at a cost of approximately $52,000,000. It operates the year round. From Seward it skirts Turnagain Arm and Knik Arm to Anchorage, and thence follows the valley of the Matanuska, the Susitna, the Nenana, and the Tanana rivers to Fairbanks. A branch line from Matanuska to Premier, Eska, and Jonesville, beyond Palmer, taps the Matanuska coal fields. Passenger fare is six cents a mile. A parlor car is carried on certain trains, but there are no diners or sleepers. Stops are made at stations for meals, and an overnight stop is made at Curry. The Alaska Railroad and two hotels are operated by the Department of the Interior. The journey of 470.5 miles from Seward to Fairbanks takes two days. Eighty-five and three-tenths miles of branch line are also in operation.

The Copper River and Northwestern Railroad suspended operation in 1938.

The White Pass and Yukon Railway runs through American territory from Skagway to the summit of White Pass, 20 miles distant, and continues thence through Canadian territory to Whitehorse, 110 miles from Skagway, head of navigation on the Yukon and a stop on the air route from Juneau to Fairbanks.

AIRWAYS. Many commercial companies operate small planes in Alaska. The Pacific Alaska Airways operates larger airliners that maintain a regular summer schedule between Juneau and Fairbanks via Whitehorse, Yukon Territory; and between Fairbanks and Nome via Ruby (subject to change; consult local travel agency). In winter its schedule is usually more extensive. Pacific Alaska airliners are equipped with radio and maintain communication with ground stations at all times.

The most isolated communities are served by smaller planes the year round, and many settlements of less than a hundred inhabitants have an average of a plane arrival a day. Some idea of the saving in time aviation affords in Alaska may be had from the fact that one may travel from Juneau to Fairbanks by plane approximately twenty times faster than by water. The roundabout voyage from Seward to Dillingham takes fifteen days by boat but only about eight hours direct by air, and the fare is approximately the same. The little town of Wiseman, well within the Arctic Circle, is 1300 miles from Fairbanks by water, but only 180 miles by air. To mush between these two points by winter dog team takes approximately two weeks, and the dried salmon for the dogs costs more than the plane fare for the trip, which takes approximately an hour and three-quarters. Casual labor in canneries and mines is frequently transported by plane, and Alaskans have been known to use a plane on the identical errand for which the resident of a small town starts up his flivver—to run over to the nearest store for a loaf of bread.

Approximately 100 landing fields—public and private—are maintained in Alaska. In addition, Alaska pilots—some of them the best in the United States—frequently land on river sandbars and grassy clearings, or on a small open stretch of water, during the summer, and a frozen lake or river or a patch of crusted snow, during the winter. At Valdez (a town built on the moraine of a receding glacier) pilots sometimes use skis in summer, taking off on the mud flats below the town and landing on the ice of the glacier above. The inaccessibility of many communities in Alaska makes freighting by plane a common practice. In addition, pilots render emergency service in transporting persons to hospitals.

Flying costs run from $18 an hour minimum for the smallest planes, on scheduled trips when the pilot has a capacity load, to $50 an hour for a chartered plane on unscheduled trips. Most airlines offer a ten percent rebate on round trips. Special tourist and scenic flights are offered at special rates. (Tell the manager of your hotel the nature of the trip you are planning, and several airline agents will knock at your door within an hour.)

Lunches aloft are not provided as in the United States, except by the Pacific Alaska Airways. Very little night flying is done.

AUTOMOBILE HIGHWAYS. The Richardson Highway (open in summer only), 371 miles long, begins at the port of Valdez, on Prince William Sound, and ends at Fairbanks, paralleling the Alaska Railroad. Frequent bus and truck service connect with steamship arrivals; good accommodations are available along the route.

The Steese Highway (open in summer only) extends 163 miles from Fairbanks to Circle. Bus and truck service connect with train arrivals; there are accommodations along the route.

Other major summer highways, all with bus or truck service, are:

Gulkana to Slate Creek, 60 miles
Anchorage to Palmer and Matanuska Valley, 50 miles
Fairbanks to Livengood, 85 miles
Nome to Council, 57 miles

Local highways with bus, truck, or taxi service are:

Juneau to Eagle River (Glacier Highway), 39 miles including branch roads
Ketchikan (Tongass Highway), 24 miles
Wrangell (Wrangell Highway), 7 miles
Sitka (Sitka Highway), 5 miles
Cordova (Eyak Highway), 7 miles
Seward (Kenai Lake Highway), 38 miles
Mt. McKinley National Park Road, 80 miles

DOG TEAMS. When automobile roads are snowed over and ports on the Bering Sea are icebound the dog team remains a vitally necessary means of transporting mail, supplies, and passengers. A sled dog weighs from sixty to eighty pounds, can pull at least twice his own weight under normal conditions for from twenty to thirty miles a day, and lives on two pounds of dried fish a day. With four to eight other huskies, he pulls a sled from six to twenty-two feet long, mounted on runners about twenty inches apart.

Dog teams are still used extensively in the west, the Interior, and the north during the winter to transport mail, passengers, and supplies. A combination of plane and dog-team travel is much used by district nurses, government officials, and others having to make regular rounds to remote districts in all weather. Dog teams are in very little use in the south or the southeast.

WATERWAYS. Yukon River. The White Pass and Yukon Railway operates in summer river steamers between Whitehorse and Nenana, a Tanana River port on the Alaska Railroad. During the open season the Alaska Railroad also operates river steamers between Nenana, on the Alaska Railroad, and Marshall, near the mouth of the Yukon. Launches run between Marshall and St. Michael, where occasional connections are made with steamers to Nome and Seattle.

Southeastern Alaska. Local steamers and motor boats operate between the following points the year round:

Ketchikan, Prince of Wales Island, Hyder, and other local points
Wrangell to Prince of Wales Island and other near-by points
Petersburg to the south end of Baranof Island
Juneau and Sitka
Juneau and Skagway

Southern Alaska. Local steamers operate the year round between the following points:

Valdez, Cordova, points on Prince William Sound (year round; irregular)
Anchorage to various local points on Cook Inlet (summer only; irregular)

Southwestern Alaska. It is expected that in 1939, or soon thereafter, a regular passenger and freight steamer will be operated once a month from Seward to the Kenai Peninsula, Kodiak, points on the Alaska Peninsula, the Aleutian Islands, and Bristol Bay (Bristol Bay points May-October only).

Boats operate out of Bethel up the Kuskokwim River during the summer.

Freight vessels plying between Seward, Kodiak, and points on the Aleutian Islands offer limited passenger service.

TERRITORIAL INSIGNIA. Alaska's flag consists of the Big Dipper and the Pole Star in gold on a field of blue, with a band of gold on three sides, and was designed by thirteen-year-old Benny Benson of Seward in 1926. In 1929 the Territorial Legislature appropriated $1,000 for Benny's education at the University of Alaska. The floral emblem of the Territory is the forget-me-not. The Pioneers of Alaska have adopted as their official song *Alaska, My Alaska,* composed by M. A. Snow of the class of 1903 of the Juneau High School, sung to the tune of *Maryland, My Maryland.*

VOCABULARY OF ALASKA TERMS. The old trading jargon of Chinook is dying a lingering death along the northwest coast of America, not without having enriched the "American" language with a few permanent contributions and a number of colorful localisms. The jargon arose out of the slaving activities of the powerful Chinook tribe of Columbia River, who did a brisk business in slaves with the Nootkas, members of a wealthy tribe which enjoyed a virtual monopoly of the shells from which the shell money of the Pacific Coast was manufactured. The jargon was originally an approximation of the Chinook language to the language of the Nootkas, but later it adopted many words from English and French. A knowledge of this jargon was indispensable to white traders, who used it extensively in Alaska from 1840 to 1890. At its height the jargon was the main method of communication for fully 100,000 people.

Although Chinook jargon had a vocabulary of over 500 words, this trading language had no formal grammar, it varied from place to place, and adopted and discarded words with the freedom of a gutter argot. From the English it borrowed such words as *house, stick,* and *boat,* and such onomatopoetic expressions as *piu piu* (stink) and *hee hee* (laugh). Many English words would not carry over into Chinook because the Indians were unable to pronounce certain letters—thus fish became *pish* and carbine *calipeen.* Examples of borrowing from French are *siwash* (sauvage) and *mush* (marche). Because of lack of grammatical structure, new ideas were expressed through compounds: thus a place of amusement became *hee hee house,* the United States *Boston illahie* (from *Boston,* American, and *illahie,* ground or earth).

Some of the Chinook expressions still used in everyday speech, together with other terms current in Alaska, are given below. Origin of the words is indicated thus: *C.* (Chinook), *E.* (Eskimauan), *A.* (terms brought by Americans).

bulldozer n. (*A.*) a caterpillar tractor equipped for stripping operations

cat n. (*A.*) caterpillar tractor

chechakho n. (*C.*) "just arrived," hence, tenderfoot

chuck n. (*C.*) water, stream

clean-up n. (*A.*) reckoning up the "take" at the end of a season, hence the "take"

flour n. (*A.*) fine gold

gurry n. (*A.*) the offal from a fish cannery

hi yu n. (*C.*) plenty

hootchenoo n. (*C.*) home-distilled spirits (the origin of the slang term, "hootch")

husky n. (*A.*) sled dog

iglu n. (*E.*) sod house, any Eskimo dwelling

iron chink n. (*A.*) an automatic device for splitting and cleaning fish in a cannery, replacing the former "China gang"

kayak n. (*E.*) single-passenger skin boat

malemute n. (*E.*) sled dog

muckamuck n. (*C.*) food

mukluk n. (*E.*) fur boot

mush v. (*C.*) get on! command to a dog team. Also to walk rather than to ride
outside adv. n. (*A.*) anywhere except Alaska, usually the States
parka n. (*E.*) (pronounced "parky") overgarment of skin, fur, or wool
poke n. (*A.*) a moosehide bag for gold dust, hence one's "roll" or wealth
siwash n. (*C.*) Indian (contemptuous)
siwash v. (*C.*) to sleep out without shelter
skookum adj. (*C.*) strong, worthy, as a "skookum hunter"
skookum-house n. (*C.*) jail
sourdough n. (*A.*) bread made without yeast, hence, old-timer
tillicum n. (*C.*) friend
tundra n. (*A.*) swampy, grassy plains of treeless regions
umiak n. (*E.*) large skin boat
umuk n. (*E.*) the "woman-knife" used for flensing skins

(Other technical terms are explained as they occur.)

POPULAR ERRORS ABOUT ALASKA

"The farther north you go the colder it gets."

The Arctic region is warmed by heat from the ocean radiated through floating ice. Thousands of square miles of Alaska lowland are colder than Point Barrow.

"Alaska is a frigid land of ice and snow."

This idea is on a par with the belief of early geographers that oceans boiled and rocks were red hot south of the temperate zone. At Fairbanks, some 120 miles south of the Arctic Circle, it is sometimes 100° in the shade. The average snowfall in Arctic lowlands is less than the average in Virginia. Luxuriant vegetation and mildness of climate have caused several regions of Alaska to be facetiously referred to as the "banana belt."

"Eskimos live in ice houses."

The word *iglu* means building, and refers in Alaska to a house of earth and wood. Snow houses are occasionally built for emergency use on the trail, but are never used as permanent dwellings.

"Alaska is remote from civilization."

Alaska's front door opens on the Polar Sea, and its neighbors on this modern Mediterranean are Canada, the USSR, Norway, Iceland, and Greenland. Alaska is about 18 hours' direct flying time from Yokohama or New York. Central Europe lies about a day and a half away via Yakutsk, Omsk, and Moscow.

"Alaska's many glaciers indicate a cold climate."

Glaciers can form only in relatively warm climates with high mountains and heavy precipitation. Glaciers are found only in Alaska's warmer areas (southeast, south central, southwest).

"There nothing green doth grow."

Alaska contains about 385,000 square miles of well-developed forest, about 65,000 square miles of land suited to agriculture, and about 35,000 square miles of grazing land. Cabbages, potatoes, and other hardy vegetables flourish far north of the Arctic Circle. Roses, lilacs, peonies, lilies, honeysuckles, and many varieties of bushes and berries grow profusely. Delphiniums bloom recklessly, growing eight or nine feet high.

"There is continuous darkness for three or four months in the Arctic."

The Arctic is never in total darkness, because of the refraction of light from below the horizon and the bright moonlight on the snow. The number of hours yearly during which print can be read out of doors is as great in the Arctic as in the tropics.

"Gold mining is the principal industry of Alaska."

Fishing is the most important industry, exceeding in annual value of product both mining and fur-taking. Unlike the extraction of minerals, with proper care fishing can remain at the present high level of income forever.

"The Klondike is in Alaska."

The Klondike gold-mining area is in Yukon Territory, Canada. Many Americans took part in the Klondike gold rush, but they had to cross into Canada first. The "Yukon Trail" of 1898 led through Canada.

"Alaska is in the hands of private corporate owners."

Over 98 percent of Alaska is owned by the Federal government.

"The purchase of Alaska was not economically justifiable."

Since its purchase the returns on the original investment have been about 2,430 percent.

"Alaska took no part in the Civil War."

The last shots of the Civil War were fired by the Confederate cruiser *Shenandoah* at Union whalers in Alaska waters.

THE SIX ALASKAS

ALASKA has an area of about 586,000 square miles, and its coast line of 26,000 miles is longer than the coast of continental United States. If it were superimposed upon the United States, Attu Island, the last of the American Aleutians, would touch California at Los Angeles, and the southeastern strip of Alaska would end at Savannah, Georgia. Point Barrow, Alaska's northernmost point, would be near Duluth, Minnesota. The Territory is equivalent in area to about a fifth that of continental United States.

Alaska may be divided into six principal regions, each with distinct physical characteristics and different types of resources in various stages of development.

1. Southeastern Alaska. Alaska's "panhandle" comprises the narrow strip of mainland and adjacent chain of islands extending southeasterly from the main body of the Territory along the west side of British Columbia for approximately 400 miles to 54° 40′. It is a region of high, rugged, forested mountains rising sharply from the water's edge and dissected by an intricate network of narrow waterways. The coast range, rising in places to elevations of 9,000 feet or

more, presents almost insuperable barriers to cross-country travel, especially as the range is cut by many deep fiords with precipitous walls rising thousands of feet from the water's edge. These fiords and deep marine watercourses have produced hundreds of islands off the mainland, so that transportation between them or with the mainland can be effected only by boat or plane. This region is the section of Alaska most accessible to continental United States, and is ordinarily reached by steamer travel through the Inside Passage from Seattle.

Southeastern Alaska is the most highly developed part of the Territory, containing one-third of the total population and the greatest amount of industry. Five substantial towns, affording most of the social facilities deemed essential to a satisfactory modern scale of living, are located there. The local economy is based on fish, minerals, timber, recreation, and various minor resources. The salmon and halibut fisheries are very highly developed and employ the greater part of the workers, both white and Native. Hard rock or lode mining, principally for gold, is second in economic importance. The great bulk of the commercial forest resources of the Territory is found in southeastern Alaska. While these now supply only the local demand for timber products, they should eventually contribute substantially to regional prosperity as raw material for a large local pulp and paper manufacturing industry. Juneau, the capital of the Territory, and Ketchikan, its largest fishing center, are located in this region.

The climate is mild and equable, with warm winters, cool summers, and a heavy precipitation. The average January temperature compares with that of central Maryland, southern Illinois, and southern Kansas. The lowest temperature of record at Sitka, –5°, compares favorably with the low record at Meridian, Mississippi, of –6°, and Tallahassee, Florida, of –2°. In some sections of this region the average annual precipitation is more than 150 inches, considerably greater than elsewhere in the United States. The length of the growing season is about 160 days.

To the tourist, southeastern Alaska is one of the scenic wonders of the world, with its mountains, glaciers, streams, and fiords, with Glacier Bay, Kasaan, and Sitka National monuments, and Tongass National Forest. To the Alaskan it is the center of civilization, where prices are low, supplies are plentiful, and where girls—young, beautiful, white, and unattached—may be actually seen on the streets, wearing the latest creations from Hollywood. Here on the islands or along the broken coastline bordered by mountains live the Tlingit, Tsimshian, and Haida Indians.

2. SOUTHCENTRAL ALASKA. This region includes the Prince William Sound and Cook Inlet sections of the southern coast and the adjacent large watersheds that extend inland to the crest of the Alaska Range in central Alaska. The coastal portion of the region somewhat resembles southeastern Alaska in physiography, climate, and vegetation, and similarly fishing is its chief means of community support. The Chugach National Forest borders Prince William Sound.

Everywhere north of this southern coastal portion the Alaska Range forms a gigantic backbone, in places 150 miles wide. Many of the peaks of these mountains rise to elevations of more than 10,000 feet and several of them are more than 15,000 feet high. The culminating point, Mt. McKinley, in Mt. McKinley National Park, is over 20,000 feet. A few of the lower passes across these highlands have been utilized by roads or railroads, but for hundreds of miles there are no feasible routes across this mountain belt that are suitable even for pack-horse trails. Snow storms are likely to occur in the higher parts of the ranges at all times of the year, and bad weather conditions are the rule in the mountains.

A number of large rivers, as well as Cook Inlet, break through the mountains fronting the coast and open up inland valleys having a light forest cover, moderate precipitation, short but rather warm summers, and winter temperatures not unlike those found in the northern tier of prairie States. The level and rolling lands afford excellent opportunities for agriculture. The Matanuska agricultural area is located in one of these valleys in the vicinity of Anchorage. Additional and even more extensive tracts of potential farm lands, notably the Kenai Peninsula agricultural area, are found in this same general locality.

Mining is the most important source of livelihood in the inland region. The large Kennecott Copper mines (closed in 1938) were located on Copper River. Lode and placer gold operations are conducted at various places. The large bituminous coal deposits of the Bering River and the Matanuska River valleys are undeveloped, with the exception of some enterprises in the Matanuska field which supply the needs of the near-by Alaska Railroad belt. The game resources here, as in other parts of Alaska, attract many sportsmen from all parts of the world and afford considerable local revenue.

Two important routes into the Interior begin at the southern coast—the Richardson Highway leads inland from Valdez, and the Federally owned and operated Alaska Railroad, from tidewater at Seward to Fairbanks. A steamship line operating on regular schedule out of Seattle by way of southeastern Alaska serves these two ports. These transportation systems provide considerable direct employment for local residents.

The population is largely centered around five towns and several large mines. In south central Alaska live branches of the Athapascan Indians, in some areas mixed with an Eskimauan intrusion.

3. Southwestern Alaska and Bristol Bay. This region includes the Alaska Peninsula, the Aleutian Islands, and the Bristol Bay area, and contains the Katmai National Monument, in which is the Valley of Ten Thousand Smokes. It has rugged topography, and its climate is wet, with foggy summers and disagreeable winters. Most of this country is treeless, lying entirely outside the forest zone, and the vegetation is a heavy growth of grass interspersed with patches of brush. The small population is largely Native—Aleuts and Eskimos. Kodiak and Unalaska, both small towns, are the only permanent white settlements of importance in the Aleutian region. Cattle and sheep grazing is being carried on in a somewhat experimental manner on a few islands, and there is some fur farming. The Pribilof Islands, located in the vicinity, are the principal breeding grounds of the fur seal in the Pacific waters. The seal herds are given special protection by the United States government. The pelting and sale are government monopolies, and the proceeds are divided among Great Britain, Japan, and the United States.

Dillingham is the principal center of the Bristol Bay area. The fisheries resources of Bristol Bay are highly important and contribute a large portion of the Alaska salmon pack. The fishing industry, together with fur trapping, furnishes the principal source of livelihood to the Native population. Practically all of the white fishery employees are brought from and returned to the Pacific Coast States each working season.

In the area south of the Aleutians is a trough of low pressure with a west-east trend, commonly known as the "Aleutian low." Through this pressure-valley pass a great many of the cyclonic disturbances of the northern hemisphere in their west-to-east movement. Altogether it exerts a great influence on the weather of the Territory, the Canadian Provinces, and the northern half of the United States.

Commercial transportation over large portions of this region either does not exist or is available only in certain seasons and at long intervals.

4. Interior Alaska. Forming the great central part of Alaska from the northern border of the Alaska Range to the southern border of the Brooks Range, there is a relatively low rolling country traversed by large rivers, such as the Yukon and Kuskokwim and their tributaries. In places this belt is more than 300 miles wide from north to south and 1,000 miles from east to west. The uplands in this area seldom rise to elevations of 600 feet, and the greater part of the country has an average of perhaps 300 feet or less. The climate is characteristically continental in type, having short, warm summers and long, cold winters. Precipitation is small, probably being less than fifteen inches a year throughout most of this area. A peculiar surface condition prevails throughout much of the Interior in that in many places the subsoil to a depth of several hundred feet is permanently frozen.

White occupation is largely confined to the middle of the Yukon River drainage area and has its greatest concentration in the general vicinity of Fairbanks on the Tanana River, a large tributary of the Yukon. The lower Yukon and lower Kuskokwim River areas consist of extensive swamps and flatlands occupied almost exclusively by Natives (Athapascans in the former and Eskimos in the latter) living under primitive conditions. The lower river valleys are remote, with very limited transportation facilities and little contact with white civilization. The introduction of reindeer to Alaska from Siberia subsequent to 1890 has materially improved the economic condition of the inhabitants of the Yukon-Kuskokwim lowlands.

Since the days of the gold rushes in the early years of the twentieth century, mining, and more particularly placer gold mining, has been the principal industry in the region. For a long period simple types of operations under which men largely worked their own claims were the rule. While this practice continues to a limited extent, most of the placer gold now mined is the product of large-scale corporate enterprise and rather complex processes involving considerable capital investments. The mining of platinum has recently assumed some prominence. Coal is produced in one of the more accessible parts of the region, for the operation of gold dredges and other local uses.

The climate has a pronounced range, varying from an average of less than -20° for January in the coldest parts of the Yukon and Tanana valleys to about 60° in July. In the upper Yukon Valley temperatures ranging to 100° in the summer are not uncommon, while in winter the temperature often drops to below that of Arctic regions—the extreme of -76° at Tanana being 10° lower than the minimum for continental United States, -66° in Yellowstone Park, Wyoming. The length of the growing season in the valleys of the Interior is only from 80 to 90 days, as compared with a period of from 140 to 160 days in the south central portion and in southern Michigan and Minnesota. Because of the prolonged daylight in summer, however, vegetation makes rapid growth, and such vegetables as cabbages attain enormous size, growing without pause both night and day during the short season.

Extensive areas of potential agricultural land occur in several localities, and the Tanana Valley has a number of farms producing vegetables, root crops, oats, and barley for local use. Fur trapping continues to be an important source of revenue to Natives and whites. Recreational features, including big game, are attracting an increasing number of visitors every year, and in time the recreational industry should be a very material factor in the local economy.

Fairbanks in the Tanana Valley is the principal community center. The Alaska Railroad and the Richardson Highway furnish outlets to the south coast, and the extensive river system and a considerable mileage of gravel roads are used for transportation within the region. In recent years the airplane has become a major factor throughout Alaska generally, but in the Interior, especially, it has greatly altered previous conceptions of distance and opened up vast new areas of activity. Regular air service to Juneau, Nome, Bethel, and near-by points is available from Fairbanks.

5. Seward Peninsula. Northwest Alaska is characterized by long cold winters and short summers. The average January temperature is 3°, the average summer temperature 50°. Placer gold mining is

the principal occupation of the small white population. As in Interior Alaska, the one-man method of gold extraction has largely been replaced by the expensive dredge type. Nome is the principal trading center and is reached by direct steamers from Seattle during the four summer months, the only period when ice conditions in the Bering Sea will permit navigation. Scheduled airplane service is maintained throughout the year between Nome and Fairbanks, thus keeping this outpost of civilization in easy and constant contact with the more populous parts of the Territory.

The large Native (Eskimo) population relies for the most part on its own primitive means for existence. The reindeer have become an important part of Native economy.

6. ARCTIC SLOPE. The northern limit of the Interior is marked by the Brooks Range, a chain of mountains forming the watershed between the Yukon Basin on the south and the Arctic Coast on the north, extending from Kotzebue Sound eastward to the international boundary, and embracing subordinate groups and ridges, such as the De Long, Baird, Endicott, and part of the British mountains. This range, named in honor of Alfred Hulse Brooks, chief Alaska geologist of the United States Geological Survey from 1903 to his death in 1924, while much lower than the mountains in southern Alaska, has peaks rising to about 9,000 feet, and presents a strong barrier to travel. The area occupied by the range is about 150 miles wide, north and south, by somewhat more than 600 miles east and west. It is a very sparsely settled region, with probably less than 1,000 permanent inhabitants. It has a sub-Arctic climate with a very short open season and long, cold winters. Some small mining camps have been established at widely separated points, and doubtless additional ones will spring up as Alaska becomes more thoroughly developed.

Northward from the Brooks Range to the coast of the Arctic Ocean, the country is dominantly of low relief, consisting of rolling uplands near the mountains, which give place northward to low, almost featureless plains, only slightly above sea level at the coast. Except for the coastal fringe it is practically uninhabited, and access to it is exceedingly difficult except by plane. Even the coastal area, on which are the principal villages, is cut off from other means of communication for much of the year, because the ocean is open for navigation only a month or so each summer. Except in the immediate vicinity of the villages there are no roads, and even marked trails are infrequent. Plane service from Nome is available the year round.

Arctic Alaska is inhabited by Eskimos, who to a certain extent have continued their primitive cultures. Its expanse of tundra contains a few prospectors, miners, teachers, officials, and other whites whose business brings them to outposts of civilization. The average annual range of temperature is from about –18° in January to about 40° in July. Precipitation is slight, less than five inches a year.

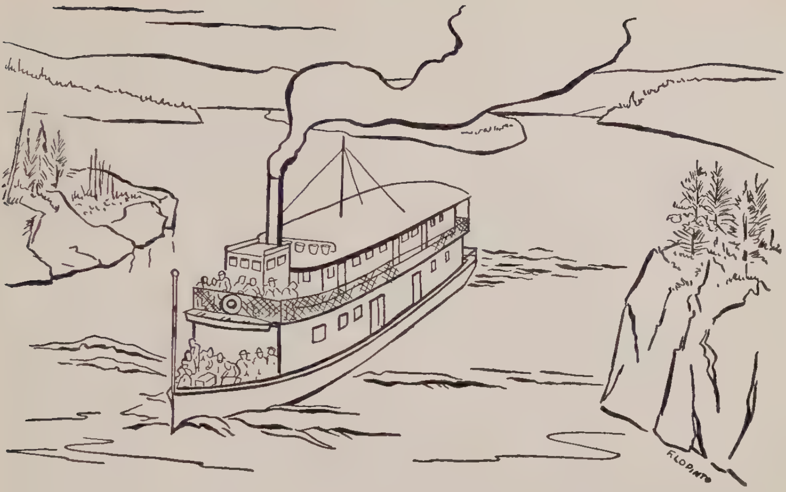
The Arctic Slope contains very extensive wild fowl breeding-grounds which play an important part in maintaining the wild fowl resources over a large section of the United States.

Alaska is divided into four political or judicial divisions. The first division is that part lying east of longitude 140°, and comprises all of southeastern Alaska and the coast region as far west as Cape St. Elias. Headquarters, Juneau.

The second division comprises western Alaska north and west of the Kuskokwim and Yukon rivers. Headquarters, Nome.

The third division comprises the region from longitude 141° westward to Bristol Bay and north to the Alaska Range. Headquarters, Valdez.

The fourth division comprises the Kuskokwim and Yukon valleys and most of the Interior north to the Arctic Ocean. Headquarters, Fairbanks.



TOURS FOR "ROUND-TRIPPERS"

DURING THE TOURIST SEASON, May to September inclusive, most visitors to Alaska make use of a variety of round-trip tours—and hence are called "round-trippers." Until the International Highway is completed or regular passenger-plane service is scheduled to Alaska, the Inside Passage from Seattle or the Canadian ports will remain the principal route available to tourists, save for special cruises to out-of-the-way points. Even when other means of transportation are finally provided, the Inside Passage will remain the most historic, scenic, and restful of all possible routes to Alaska.

Although the round-trip tours offered by the major steamship companies somewhat limit the traveler's freedom of movement, they effect considerable savings in time and money. Reservations should be made well ahead of time, as the Alaska boats are always crowded to capacity, especially in midsummer. Visitors should map out their itineraries in advance with the assistance of their local travel agency, and should not expect to vagabond from one interesting spot to the next, as they might do in more thickly settled countries. The influx of about 25,000 visitors to Alaska each summer and the consequent doubling of the white population place a great strain on the transportation facilities of this frontier country, so that only visitors uncommonly rich in time and travel funds can afford to ignore prearranged itineraries. Round-trippers altering their itinerary in Alaska should immediately get in touch with the local steamship agent—failure to take this precaution may result in a week or more of vexing delay. American vessels do not visit Vancouver, Victoria, or other Canadian ports. Canadian vessels, on the other hand, are not permitted to carry passengers from one American port to another.

Steamer rates given are *minimum first-class fares per adult person,* including berth and first-class meals while aboard. Most vessels offer steerage rates (men only; bring your bedroll or blankets). Travelers should add approximately $6.50 for hotel room and meals for each twenty-four hours ashore, unless all-expense trips are specifically mentioned. Since Alaska vessels are combination freight and passenger steamers, variations of time and schedule occur, with occasional unexpected "surprise" visits to out-of-the-way ports.

The Inside Passage from Seattle or Vancouver to Skagway or Juneau (see Part II, 1), with a stop at Sitka, and return, is a trip frequently planned by the first visitor (9 or 11 days, 2,500 miles, minimum fare $95; 11-day trip allows 2-day stopover at Juneau or Skagway on some sailings). This trip may be extended from Skagway by a tour to Whitehorse by the White Pass and Yukon Railway (9 days, 2,700 miles, minimum fare $119, additional expenses about $6.75), or to West Taku Arm by the White Pass and Yukon Railway and lake steamer (9 days, 2,800 miles, minimum fare, including all expenses, $124), or to Whitehorse and West Taku Arm (12 to 19 days, 2,900 miles, minimum fare $132, additional expenses from $7 to $17.75), or to Dawson by the White Pass and Yukon Railway and river steamer (15 to 26 days, 3,000 miles, minimum fare $207, additional expenses $15), or to Dawson and West Taku Arm (15 to 26 days, 3,000 miles, minimum fare $222, additional expenses $10). (For these extensions of the trip, and for Haines and Skagway, see Part II, 2.)

The Prince William Sound Cruise (see Part II, 3), which extends the Inside Passage Cruise from Juneau to Cordova, Valdez, and Seward on Prince William Sound (12 days, 3,500 miles, minimum fare $130), is the usual method of reaching other areas and many tourists who make the shorter trip regret that they did not visit Prince William Sound and the main part of Alaska.

The Copper River and Northwestern Railway from Cordova to

Chitina ceased operations in 1938. There was a probability in 1939 that Kennicott could be visited by taking the Edgerton Cutoff at Willow Creek (see Part II, 4) to Chitina, thence to Kennicott by specially operated tourist trains.

Many travelers take the Yukon River Circle Tour (see Part II, 2), either upstream via Seward (35 days, 5,200 miles, minimum fare $307.70, additional expenses $52.75), or downstream via Skagway (23 days, 5,200 miles, minimum fare $315.20, additional expenses $29.50). The upstream tour via Seward is the more leisurely, permitting ample time at the high points of the trip—Matanuska, Mt. McKinley National Park, Fairbanks, Dawson, and Skagway.

Visitors who do not care to make the Yukon River Circle Tour may take the Alaska Railroad (see Part II, 5) north to Fairbanks, visiting Matanuska and Mt. McKinley National Park, and return south to Valdez by the Richardson Highway (see Part II, 4), or reverse the order (19 days, 5,300 miles, minimum fare $198.20, additional expenses $30).

At Fairbanks many interesting side trips are available to the University of Alaska, near-by placer mines, and points on the Steese Highway (see Part II, 6). Wiseman, Bettles, and Chandalar, all north of the Arctic Circle, where placer mining is still done by primitive methods, are accessible by plane from Fairbanks. A week to ten days spent in Fairbanks is not too much.

No regularly scheduled passenger vessel was plying along the Aleutians (see Part II, 7) and in Bristol Bay (see Part II, 8) in 1938, but when regular service is re-established visitors with an extra month to spare and a love for remote points on the map should take the trip from Seward along the Alaska Peninsula and the Aleutians, thence northeast to Bristol Bay. The time of this trip can be cut in half by returning to Anchorage by plane.

Mining activities made the Goodnews Bay and lower Kuskokwim area (see Part II, 8) easily accessible by plane from Anchorage or Fairbanks in 1939.

Nome and northwestern Alaska (see Part II, 9) are easily reached in comfortable and regularly scheduled planes from Fairbanks, returning the same day or a week later.

From Nome the Arctic (see Part II, 10) is about six hours away by plane. The Pribilofs (see Part II, 8), Norton Sound, Nome, and Siberia are also touched in special cruises (see below).

SPECIAL CRUISES

BERING SEA CRUISE. Seattle to Nome and/or St. Michael by way of Unalaska, and return (25 to 35 days, 6,000 miles, minimum fare $160).

ARCTIC CRUISE. Seattle to St. Michael, Nome, East Cape (Siberia), and other distant points by way of the Pribilof Islands and Unalaska, and return via Juneau and Ketchikan (28 days, 7,000 miles, minimum fare $260).

VAGABOND CRUISES. Unscheduled cruises to ports of call, depending on freight (12 to 25 days, minimum fare $76 to $152—not recommended on first visit to Alaska).

TRAVEL SCHEDULES

(Information compiled from available 1939 sources: consult local travel agency for current round-trip schedules and fares. Ocean- and river-steamer fares include berth and meals while on board; rates are those for *minimum first-class passage per adult person* only. Times are approximate, and include stopovers. Rates are subject to change without notice.)

To Alaska from the Pacific Coast

From	To	Miles (one-way)	Time	Fare (one-way)
Seattle (Inside Passage, via ocean steamer)	Ketchikan	757	2 days	$31.50
	Wrangell	859	3 days	36.50
	Petersburg	907	3 days	38.00
	Juneau	1,033	3–4 days	43.50
	Haines	1,137	4–5 days	47.50
	Skagway	1,153	4–5 days	47.50
	Sitka	1,335	5–6 days	47.50
	Cordova	1,599	4–5 days	61.50
	Valdez	1,686	5–6 days	62.50
	Seward	1,856	6–7 days	65.00
Seattle (direct, via ocean steamer)	Unalaska	1,962	9 days	$80 to $90.00
	St. Michael	2,623	9–10 days	80 to 110.00
	Nome (summer only)	2,621	9–10 days	80 to 110.00

WITHIN ALASKA, BRITISH COLUMBIA, AND YUKON TERRITORY

Waterways

From	To	Miles	Time	Fare
Juneau (via launch)	Petersburg	126	10 hrs.	
	Wrangell	174	14 hrs.	
	Ketchikan	276	23 hrs.	
	Sitka	200	16 hrs.	(Consult local travel agency for schedules and fares)
Ketchikan (via launch)	Metlakatla	15	1 hr.	
	Kasaan	30	2½ hrs.	
	Hydaburg	90	7½ hrs.	
Ketchikan (via channel steamer)	Hyder	150	12 hrs.	
	Stewart, B.C.	150	12 hrs.	
Sitka (via boat)	Goddard	15	1 hr.	
Whitehorse, Y.T. (via river steamer)	Dawson	460	1½ days	
Dawson, Y.T. (via river steamer)	Nenana	900	4 days	
Nenana (via river steamer)	Marshall	858	5 days	
Tanana (via river steamer)	St. Michael	900		
Seward (via ocean steamer)	Seldovia Kodiak Unalaska Dillingham		15 days	(No regular sailings 1939; consult local travel agency)

Highways

From	To	Miles (one-way)	Time	Fare
Anchorage (via Palmer Highway)	Palmer	50	2 hrs.	$1.50
Valdez	Fairbanks	371	1½ days	$15 to 25.00
(via Richardson Highway)	Copper Center	103	½ day	6.50
Copper Center (via Edgerton Cutoff)	Chitina	39	2 hrs.	2.00
Fairbanks	College	4	15 min.	.50
Fairbanks	Olnes	20	——	(no regular
(via Elliott Highway)	Livengood	85	——	bus service)
Fairbanks	Circle	163	¾ day	10.00
(via Steese Highway)	Circle Hot Springs	138	¾ day	10.00

* *Railroads*

Skagway (via W P & Y Ry.)	Whitehorse, Y.T.	111	7 hrs.	$20.00
Seward	Anchorage	114	4½ hrs.	6.85
(via Alaska R.R.)	Matanuska	151	9½ hrs.	9.05
	Palmer	157	9¾ hrs.	9.45
	Mt. McKinley National Park	348	28 hrs.	20.85
	Nenana	412	30½ hrs.	24.70
	Fairbanks	470	33¼ hrs.	28.20
Nenana	Fairbanks	59	2 hrs.	3.50
(via Alaska R.R.)	Mt. McKinley National Park	64	2½ hrs.	3.85
Fairbanks	Mt. McKinley National Park	——	4½ hrs.	7.35

* Time given includes lunch, scenic, and overnight stops; for running time see time tables.

NOTE: The Alaska Railroad offers special summer round-trip rates of a fare and a third.

Airlines

(Every important area is served by one or more airlines offering frequent flights, scheduled or unscheduled, to any district in Alaska or adjacent districts in British Columbia and Yukon Territory, summer and winter; mileage, time, and fare are approximate.)

From	To	Miles (one-way)	Time	Fare (one-way)
Juneau	Petersburg Wrangell Ketchikan Sitka Chichagof	(Consult local travel agency)		
	Whitehorse, Y.T.	170	1 hr.	$25.00
	Fairbanks	750	4½ hrs.	90.00
Fairbanks	Circle Hot Springs	100	1 hr.	25.00
	Wiseman	190	1¾ hrs.	45.00
	Bettles	190	1¾ hrs.	45.00
	Hot Springs	80	¾ hr.	25.00
	Bethel (stops at McGrath)	700	5½ hrs.	88.00
	Nome (stops at Ruby & Flat)	700	5½ hrs.	78.00
	Seward	350	3½ hrs.	40.00
	Valdez	300	3 hrs.	35.00
	Cordova	350	3½ hrs.	40.00
Anchorage	Dillingham	350	5 hrs.	70.00
Dillingham	Platinum	110	1 hr.	25.00
	Bethel	230	2½ hrs.	55.00
Nome	Candle Kotzebue Barrow	(Consult local travel agency)		

HOTELS AND MEALS

(Rates based on information supplied by travel agencies; hotels and roadhouses listed are not especially recommended or preferred to others, but are those at which "round-trippers" usually halt en route. Approximately $6.50 a day per person will insure good and comfortable hotel accommodation and three meals.)

ANCHORAGE

Anchorage, European plan. $2.50 to $3.50 per day per person. Bus meets trains. Free bus. Hand baggage, 25 cents between station and hotel. Transfer on trunks, $1.00 each.

Parsons, European plan. $3.00 to $4.50 per day per person. Bus meets trains. Bus rate per person, including hand baggage, 25 cents each between station and hotel. $1.00 for trunks each way.

CARCROSS

Caribou Hotel, European plan. $2.00 per day up. Meals: breakfast, $1.00; lunch, $1.25; dinner, $1.50.

CHITINA

Chitina, American plan. $5.00 per day per person (includes lodging and two meals).

CORDOVA

Windsor, European plan. $2.00 to $4.00 per day per person.

CURRY

Curry (operated by Alaska Railroad, Department of the Interior), European plan. $3.00 to $4.00 per day per person. All meals $1.50 each.

DAWSON

Royal Alexandra, Regina, Yukonia, European plan. $2.00 to $6.00 per day per person. Meals, 75 cents to $1.50.

FAIRBANKS

Nordale, Pioneer, Northern, European plan. $3.00 to $6.00 per day per person. Free bus between depot and hotel. Baggage each way: trunks and grips, 50 cents each; small packages, 25 cents each. *Arctic,* $1.00 to $2.00 per day per person.

JUNEAU

Baranof, Gastineau, Juneau, European plan. $2.00 to $4.00 per day per person.

KETCHIKAN

Ingersoll, Stedman, European plan. $2.00 to $4.00 per day per person.

MT. McKINLEY NATIONAL PARK

Savage River Camp, American plan. $7.50 per day per person.

McKinley Park Hotel (operated by the Alaska Railroad, Department of the Interior). $4.00 to $5.00 per day per person. Breakfast, $1.00; lunch, $1.50; dinner, $2.00.

NENANA

Southern, Cooney, European plan. $1.50 to $2.00 per day per person.

PALMER

Matanuska Lodge, European plan. Single room, $2.50; double room, $3.50 to $4.50. Weekly and monthly rates on request.

PAXSON

Paxson's Lodge, lodging, $2.00 per night.

SEWARD

Van Gilder, Seward, European plan. $1.50 to $4.00 per day per person.

SKAGWAY

Golden North, Pullen House, White House, European plan. $1.50 to $4.50 per day per person. The first two named, American plan at guest's option, $5.00 and up per day per person.

WHITEHORSE

Whitehorse Inn, Regina, European plan. $2.50 to $4.50 per day per person.

MEALS

(Except as otherwise noted, meals at the various Interior towns will average from 75 cents to $2.00 each.)

WHITE PASS & YUKON RAILWAY

Bennett (lunch station only). Table d'hote lunch, $1.00.

RICHARDSON HIGHWAY

Gulkana, Paxson, Big Delta, $1.00 each.

ALASKA RAILROAD

Lunch at *Healy,* $1.00. Lunch at *Palmer* (Matanuska Colony), 50 cents to 75 cents.

SIDE TRIPS

(Fares are round-trip per adult person)

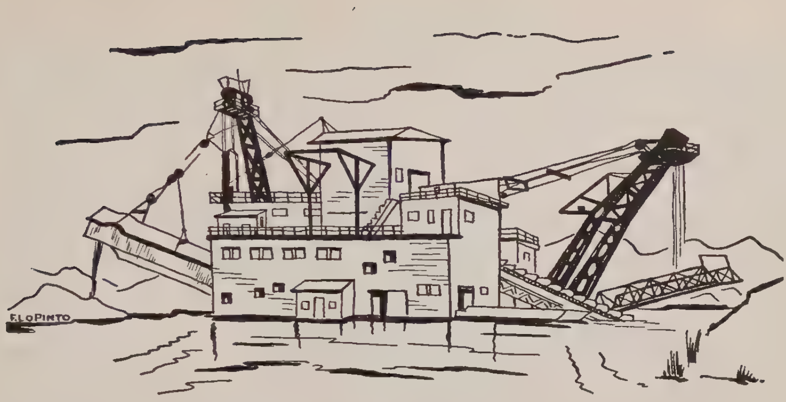
At Juneau: Points of interest in Juneau, Juneau to Auk Lake and Mendenhall Glacier and return, by automobile (34 miles)	$ 2.50
Juneau to Taku Glacier and return, by plane (85 miles, 4 passengers minimum)	9.00
Juneau to Mendenhall Glacier and return, by plane (40 miles, 5 passengers minimum)	4.50
Juneau to Lake Hasselborg or Lake Florence and return, by plane (trips by special arrangement)	—
Juneau to Atlin and return, by plane (200 miles, 4 passengers minimum)	35.00
Juneau to Taku River Lodge, by plane (5 passengers minimum)	6.00
At Skagway: Skagway to Lake Bennett by the White Pass and Yukon Railway and return (fare includes lunch at Bennett)	7.50
At Valdez: Valdez to Keystone Valley and return, by automobile	5.00
At Seward: Seward to Palmer and return, by the Alaska Railroad	12.60
At Anchorage: Anchorage to Lake Spenard and around Loop Highway and return, by automobile	3.50
Anchorage to Palmer over highway, including sightseeing trip through the Matanuska Valley and return, by automobile	5.00
At Palmer: Sightseeing trips through Matanuska Valley, by automobile	1.50
At McKinley: 48-hour stopover in Mt. McKinley National Park: all-expense tour including transportation, lodging, meals	38.50
Motor trips $7.50 to	30.00

At Fairbanks: University of Alaska and Experiment Station and return, by automobile	2.50
University, Experiment Station, and Farm Road mining district and return, by automobile	3.50
Summit, dredges, and Chatanika and return, by automobile	6.00
Combined trip, including University, Experiment Station, Farm Road, dredges, and mining section and return, by automobile	10.00
Fairbanks to Circle over Highway, returning same evening to Circle Hot Springs for overnight stay, returning to Fairbanks following day, by automobile (including meals and lodging)	30.00
Midnight sun flight June 21 (trip by special arrangement)	——
Flights may be arranged to Wiseman, Bettles, Fort Yukon, etc.	——

(Many other side trips to near-by points of interest are given in Part II in connection with the localities described.)

PART I

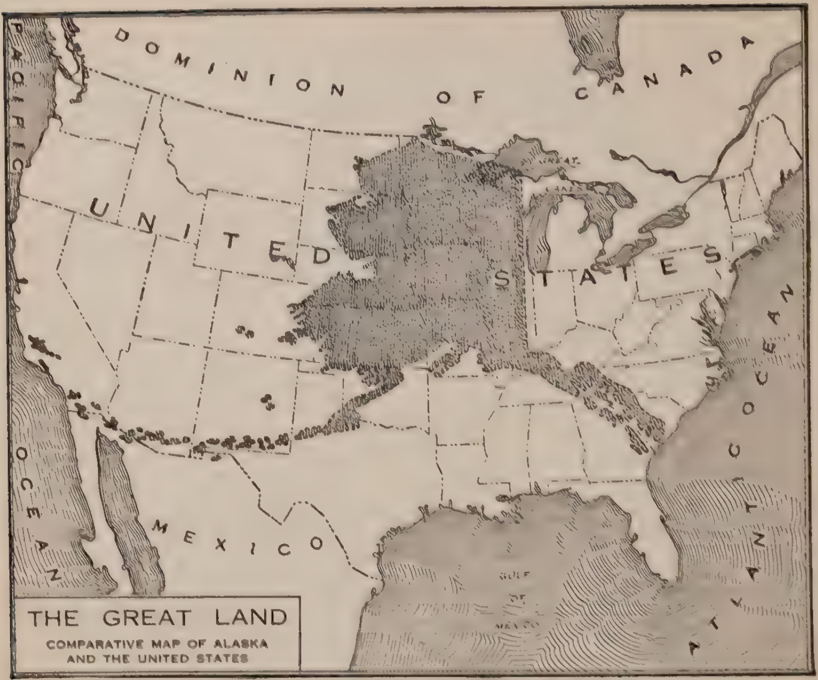
THE GREAT LAND



1. ALASKA COMES OF AGE

IN ALASKA, north of time, two utterly dissimilar eras dwell together at the same moment. A world of streamlined industrial techniques exists side by side with ancient cultures, in a country so old as to be brand new, where the physical process of creation is still going on. Many times a day scenes illustrate this double time-world. A plane circles down and comes to rest beside a skin kayak, its design unchanged for a thousand years. A Tlingit Indian carves his "family tree" with an adze on a forty-foot totem pole—but works "on the line" in a cannery buzzing with the best of modern automatic machinery. Along the benchlands near Fairbanks great gold dredges nuzzle into the gravel and disturb the bones of dinosaurs, trapped and buried here millions of years ago—monsters strikingly resembling the dredges in size and shape.

An hour's summer flight north of Juneau, Alaska's bustling little capital city, leads to a world in which time has hardly yet begun. A stop is made at Strawberry Point to deliver the mail and taste Alaska strawberries. As Strawberry Point falls between the silver shoes of the pontoons, something that looks like cotton-stuffing from a torn comforter begins to unroll overhead—fog, the dread of pilots in the north. The plane skims lower and lower. Finally it alights to chug along the surface of the water, dodging baby icebergs that begin to drift



THE GREAT LAND
COMPARATIVE MAP OF ALASKA AND THE UNITED STATES

from the ice walls in Glacier Bay. At last, by a series of leaps in the air and scuttlings along the water, the plane penetrates an inlet, blocked by a wall of utter white crevassed with rifts of violent blue—a glacier.

Suddenly summer is done. A cold wind blows from the back door of creation. The plane, its passengers in shoes and hats, the sharp smell of gasoline, the taste of strawberries warm from the sun—all these cease to be. They cannot be; it would be an incredible anachronism for them to be. Yet on the moraine, almost against the ice, is the tent of a prospector for gold, and from it runs a red-haired girl in riding breeches with a packet of camera film.

Of this place John Muir wrote a generation ago, "One learns that the world, though made, is yet being made, that mountains long conceived are now being born, channels traced for coming rivers, basins hollowed for lakes; that moraine is being ground and outspread for coming plants—coarse boulders and gravel for forests, finer soil for grasses and flowers—while the finest part of the grist, seen hastening out to sea in the draining streams, is being stored away in darkness and builded particle on particle, cementing and crystallizing, to make the mountains and valleys and plains of other predestined landscapes, to be followed by still others in endless rhythm and beauty."

Being present toward the beginning rather than toward the end of a phase of the life-process is a new sensation for most of us sons and daughters of industrial civilization. Alaskans feel that sensation every few years when in the Interior or "to westward" the Great Land suddenly wrinkles its hide and the needle of the seismograph at the University of Alaska swings to register an earthquake. A smoking volcano in the Aleutians becomes ominously clear, and ash and superheated gases burst out of monster vents, as at Katmai, where there took place in 1912 what geographers believe to be the greatest volcanic eruption in recorded history. Or in the glacier country a few million tons of ice recede, hills and valleys are uncovered, for the first time in thousands of years the sun warms the earth, a spruce seed falls, and the process of life begins.

A feeling of awe can hardly fail to be experienced in some degree by the most hardened traveler in Alaska. Even an unromantic scientist, Robert F. Griggs, who directed a National Geographic expedition to the Valley of Ten Thousand Smokes, wrote, "The sensation of wonder and admiration which came first to all soon gave way to one of stupefaction. The magnitude of the phenomena simply overcame us. . . . For the first few days we were simply overawed. For a while we simply could not think or act in the ordinary way. At night I would curse myself, as I lay in my blankets, and make a list of the things I wanted to do the next day; but when morning came I could not move myself to action. I could only look and gape." The members of this expedition, trained scientists, suffered acutely from the impact of this tremendous natural commotion upon their civilized minds; one at least experienced complete nervous exhaustion. "A large factor in my feelings," frankly confessed the leader of the expedition, "was plain fear."

Some such feeling overwhelmed even that matter-of-fact eighteenth-century seaman, Lemuel Gulliver, when on the seventeenth day of June, 1703, he was shipwrecked on the Alaska coast. Even in 1939 it still seems appropriate that Gulliver should have found in this land men "as tall as an ordinary spire-steeple, taking ten yards to a stride.

speaking many degrees louder than a speaking-trumpet in voices so high in the air that it sounded like thunder." Another world-traveler, Baron Munchausen, attempted to laugh off the appalling size of these regions with a stale exaggeration or two.

Physiographers since Gulliver's and Munchausen's day have attempted to scale down the sheer size of nature's undertakings in Alaska by homely devices. They have amused themselves by setting the Brobdingnagians of our day—our tall buildings—side by side with its ice pinnacles; by drawing a plan of the city of Washington full size on an inconsiderable portion of Columbia glacier; by dropping, one by one, every building in Manhattan, Brooklyn, the Bronx, and other boroughs of New York City, into the crater of Katmai, leaving it still unfilled. Agriculturists have pointed out that little Matanuska Valley could supply enough vegetables for the entire population of Alaska and a generation unborn. Forestry experts state that new timber growth could supply annually one-quarter of the total requirements of the United States in newsprint.

But such statistics are only a kind of whistling in the dark. Every honest person, who penetrates Glacier Bay, or looks up at the face of Columbia Glacier, or gazes into the heart of the Valley of Ten Thousand Smokes, or wonders at the wreathed summit of Smoking Moses, or sees for the first time the double silver summit of Mt. McKinley still sunlit at ten-thirty at night, experiences fear. That fear is something more than mere awe at size. It is the sense of two worlds of time coexistent—the knowledge that five thousand years of civilization are a day in the life of such a land as this. It is the sudden realization that while Jeremiahs howl in the streets of our capitals, lamenting the imminent fall of western civilization, here in the Great Land, not a hundred hours' traveling time from our great cities, it is the morning and the evening of the first day.

The time-traveler might journey in 1939 west beyond the westernmost city in continental United States to Goodnews Bay, Alaska.

In 1937, Platinum was Alaska's newest boom town with a population of forty-eight white men and two white women. On a sandspit were perched two long, single-story trading posts, one of which contained the post office. Beyond was a spanking new roadhouse, the most imposing structure of the settlement, with its dining room and kitchen on the first floor and its sleeping room crowded with cots on the second. Between the post office and the roadhouse were corrugated iron sheds, two shacks in which beer was sold, and a flock of white tents huddling on wooden floors. Smudge on the horizon marked the position of the freighter *Laporte,* laden with two thousand tons—500,000 dollars' worth—of dredge, fast on a sand bar. She was ultimately floated off, just in time to miss a storm that would have scuttled her.

In the roadhouse, waiting for the *Laporte* to pull off the bar, the total male white population of Platinum talked shop. *Fifty-cent gravel, thirty-cent gravel. Postelthwaite of New Zealand. Lae, in New Guiana, where four 1,200-ton dredges and two hydroelectric plants were freighted in over the mountains by plane. The Lena and Amur rivers in USSR, where American engineers installed five gold dredges for the Ural Platinum Trust and showed the Russians how to run 'em.* Arguments waxed over yardage, power, gasoline consumption. An engineer in the uniform of that breed the world over—leather boots, khaki breeches, red kerchief—pulled out his pocket slide rule to prove a point. The others agreed or disagreed violently, pouring out instances, figures, facts from their personal knowledge of mining learned all over the world. In the late summer of 1937 there was set up in this tiny settlement the latest in mining dredges. Its buckets, each a ton's weight, began scooping a yard of gravel at a time. The gravel moved down the hopper into the screen, the coarse tailings traveled up the belt to be piled behind the dredge as it inched its snout along, and the pay dirt moved to the washing table, there to settle down along the riffles—platinum!

Fifty paces from the roadhouse toward the beach, living in a world five thousand years before this new world of slide rules and half-million-dollar dredges, was a tiny village of Eskimos. Their huts were holes dug in the ground, surmounted with a driftwood frame covered with flattened gasoline tins or skins, or perhaps with white man's canvas. Their walrus-skin boats rested upside down on the beach. Their dogs, half-starved because it was summer when beasts can do no work, strained at their leashes and howled at the racks of sun-dried salmon beyond their reach. The men were away fishing, and the village contained only old men, women, children, and cripples. The women made grass baskets to trade at the store for tins of white man's food or yards of gingham, biding the time when their men would return from the canneries with food, blankets, and silver dollars. Although dependent upon the white man, this village touched the white man's civilization but slightly. And although many of these Eskimos had never seen an automobile, and certainly none of them a horse, even the children hardly looked up when a plane roared down.

Few other corners of the modern industrial world have seen the application, on so large a scale, of the latest discoveries of science to the age-old occupation of mining. All over Alaska monstrous dredges are pushing their snouts forward, leaving behind mile upon mile of tailings: on the flats of Nome, at Circle, at Flat, at Deadwood, at Ruby, near Fairbanks, where students from the University of Alaska watch beside the hydraulickers for the bones of prehistoric creatures. Many of the original gold prospectors of the Klondike are dead; others have survived the revolution in mining methods; still others are lively old sourdoughs in the Pioneer's Home at Sitka. Their dance halls are deserted, their Klondike Annies respectably aged, their pokes of gold dust spent. Their old stamping grounds are being reworked by modern methods.

Mining today is an affair of mathematics, of finance, of the latest in engineering skill. Cautious men behind polished desks in San Francisco figure out in advance the amount of metal to a cubic yard, the number of yards washed a day, the cost of each operation. They have no need of grubstakes. Before they have made the initial investment they know, as well as any solid businessmen can know, what their profit will be.

Alaska's greatest and most profitable industry, fishing, has retained some of the color and flamboyance lost when individual placer mining was replaced by mechanized dredging. During the brief salmon season fishermen pour into southeastern Alaska and Bristol Bay, not only from other parts of Alaska, but from the entire Pacific coast. Preachers, schoolteachers, clerks, old men and young children leave their customary occupations to set gill nets and rush their catch to the canneries. Relatively high earnings for this brief period are not uncommon, and a yarn is current in Alaska about a prisoner in the Dillingham "jailhouse" who, setting his gill nets not far from the jail, cleared $826 for the season. The calm shallow waters of Bristol Bay suddenly become alive with a fleet of ocean-going steamers, long since retired from transoceanic service, and now used to transport, shelter, and feed thousands of seasonal fishermen brought from the Pacific Coast.

The farming and grazing land in Alaska is as extensive as the farming areas of all the North Atlantic states as far south as Virginia. Grains, such as rye, wheat, oats, and barley, are successfully grown in the Interior, away from the wet coastal area, and hardy vegetables can be grown almost anywhere, even within the Arctic Circle. Alaska potatoes not long ago took first prize at a State fair in Minnesota. Yet there are only about 1,000 farmers in Alaska—this, in spite of the fact that Alaskans consume annually farm produce imported from the States valued at almost four million dollars. Although it was one of the earliest activities of civilized man, farming was the last to be undertaken thus far north of time—not for lack of rich farming land, but for lack of transportation and marketing facilities.

Not only for farmers is transportation the crucial factor in the future development of Alaska. It is of prime concern to the miners in the Interior, the fishermen in southeastern Alaska, Bristol Bay, and along the Aleutians, the merchants in the principal cities, the fur farmers all over the territory, the lonely Eskimo reindeer herders, the sheep herders in Umnak, farther west than Honolulu—to every Alaskan, in fact, who has a stake in the country. One of the unfortunate historical facts concerning the Great Land is that from its first sighting by Vitus Bering in 1741 to its most recent gold rush the psychology of its development has been that of the exploiter rather than that of the permanent resident whose future is bound up with the future of the country.

There are, to be sure, nearly six hundred miles of railroad operating the year round in Alaska, including the government owned and operated Alaska Railroad; approximately 2,300 miles of automobile highway; 1,650 miles of grubbed and cleared sled roads; and 7,250 miles of trail. Much use is made of waterways, especially along the Yukon and Tanana rivers, in the salt-water channels and inlets of southeastern Alaska, in Prince William Sound, Cook Inlet, along the Aleutians, and in Bristol Bay—all these, except the last, open the year round. About forty commercial companies operate approximately one hundred planes the year round, making use of approximately 100 landing fields, public and private, as well as inlets, sounds, and improvised landing places on sand bars, glaciers, and snow fields in winter. Three American and two Canadian steamship companies provide freight and passenger transportation to Alaska from the Pacific Coast. Yet these means of transportation, adequate for a pioneer country concerned mainly with the development of natural resources, are pitifully slight for a land with such a capacity for development as Alaska.

The combined area of Sweden and Norway is about equal to the area of Alaska, and their latitudes are roughly equivalent. Yet Sweden and Norway support a population more than one hundred fifty times the population of Alaska today. "The temperate zone of Alaska," said President Harding in an address at Seattle in July, 1923, "is an area near three times that of Finland. Its climate is milder and more equable. Its forests and fisheries exceed those of Finland. Its coal deposits are among the world's greatest, while Finland has no coal. Its wealth in gold has scarcely been scratched. Finland has no gold. There is copper in Finland, but there is a thousand times as much in Alaska. Two of Europe's great cities, Christiania (Oslo) and Petrograd (Leningrad), are situated farther north than the richest and most populated part of Alaska. Stockholm, the 'Venice of the North' with 400,000 population, is in the same latitude as Juneau. Glasgow, one of the world's greatest workshops, with over a million inhabitants, if translated in its own latitude to the Pacific coast of America, would be the metropolis of Alaska. Copenhagen, with 600,000 population, is in almost exactly the same latitude as Wrangell, Alaska. Helsingfors, the capital of Finland, on the extreme south of the country, would be an interior city of Alaska, yet it is one of the fine cities of Europe. This study of latitude and location seems likely to help in projecting a picture of the future Alaska. The climate in Alaska as to temperature is no more severe on the coast than in the greater part of our northern mainland. The extreme colds are often no more trying than in Washington, D.C."

The assumption is that because millions of people live happily and thrive in Scandinavian countries, Alaska can support a similarly dense population. But the case is quite different. Not only are soil and climatic conditions different in Scandinavia, but the economic and social settings are radically dissimilar, and above all, a large market is there ready-made. The comparison is tempting and frequently drawn, but not wholly applicable.

Although Alaska is the United States' last frontier, it is by no means the traditional frontier of covered-wagon days. The suggestion has often been made that with vast areas in the United States subject to drought conditions and other hazards, with substantial amounts of land of a marginal or submarginal character, and with fewer opportunities for the small operator to profit from exploitation of land resources, Alaska offers a new frontier. No doubt in a limited sense Alaska does provide some opportunity of this character, but hardly as a solution to a problem which may exist in the United States. Agriculture is usually responsible for permanent settlement in a new country; but soil and climatic conditions in Alaska are such that no embracing economy can be developed principally upon an agricultural basis. Whatever agricultural development occurs in Alaska will be dependent upon the extent to which mining and industries adjacent to agricultural lands are developed. Industries based upon renewable resources, such as timber, fish, and wild life, or upon the scenic attractions of Alaska, or mining, will be far more important to its future than any type of farming. And all these industries require much more capital than pioneers are likely to possess.

The density of population and the number of urban communities within a region are usually indices of its industrial development. Based upon these criteria, Alaska is only in the first stages, for in 1930 it had only 30,000 white inhabitants, and only seven cities of 1,000 or more population. These figures acquire added significance when it is realized they relate to a Territory to which the parent country paid little constructive attention prior to the middle 80's of the last century—a situation indicated by the fact that not a single "little red school house," long a symbol of our national public pride, had been erected in the Territory. Down to 1937 the total mileage of public highways constructed was about equivalent to that which is regarded as necessary in continental United States to care for the needs of an area approximately 36 miles square. Yet 30,000 people undertook an ocean journey almost transatlantic in time equivalent, despite the fact that historical forces have not developed in the American people a bent for overseas enterprise, and despite the lack of comforts to which the immigrants had been accustomed.

Within forty years these thirty thousand persons constructed a school system of some one hundred Territorial free schools, and 11 four-year accredited high schools; established a university with a student body of over two hundred; and created industries that ship to continental United States products with a maximum annual value of $76,500,000. Alaska cities, though small in size and number, have provided themselves with essential public utilities and public improvements. All this testifies to the fortitude and initiative of those to whose hands Alaska yielded its wealth, as well as to the bounty of the natural wealth of the Territory.

But an increase in the population of these towns and rural communities depends, in part at least, upon the extension and improvement of existing and additional cultural and social amenities of normal living found in twentieth-century America. For these cities to keep step with a changing America requires the continuing investment by communities and by the Territory in education, libraries, public utilities, transportation, communication, recreation, and other essentials of general welfare. They require the expenditure of public funds which can be derived only through taxation.

It is safe to say that the extraction of natural wealth from Alaska has benefited continental United States more than it has Alaska. This wealth, becoming the property of absentee owners, leads to greater accumulation of capital in the United States, but none within the Territory. Without local accumulation of capital there can be no local reinvestment, and no stimulus to develop industry or home markets. In view of this and the special difficulty created by the fact that most of the Territory is owned by the Federal government, it has been suggested that Alaska might take special measures to make capital available to its citizens, and the Federal government grant special aids in lieu of taxes upon the property in its possession in order to enable Alaska to hold the population which is economically attached to it.

Alaska has been influenced by a conscious national policy of conservation which has been in operation for some years. Conservation means principally securing a sustained yield from resources which are expendable or exhaustible through unrestricted use, but which, with care and good management, need never be destroyed. By far the greatest number of Alaska's natural resources fall into this category—the fisheries, wild life, and forests being among the more important. Conservation slows up the tempo of exploitation of natural resources, of course, and there is a group of anticonservationists who prefer to see Alaska serve solely as a source of raw materials for the United States, and would subordinate cultural and transportation development to this one end. Such an Alaska is undoubtedly possible. It is capable of making considerable contributions to the welfare of the people of the United States as long as the resources last. It would be a "boom" Alaska developed as a result of a policy of frank exploitation. Such a policy would have to look to the accumulation within the Territory of a sufficient labor supply to make exploitation possible. Accumulation of capital within the Territory would not be essential.

After the boom, this Alaska would probably be thinly populated. Most of the resources would have been exported for the benefit of absentee owners, and its people would depend upon what remained of depleted mineral resources. Ghost towns would dot the country. A little local industry and some agriculture would be scattered here and there. All the governmental services would be demanded just as in boom days. The ownership of the mines and other resources would be largely in the hands of a few large corporations, and little local capital would be available.

An alternative policy of development looks toward a future Alaska with its own well-rounded economy and gradual accumulation of capital within the Territory itself. A policy shaped toward this end would aim at the ultimate attainment of a considerable degree of financial independence for Alaska. It would be directed toward an Alaska with a course of development analogous to that of the United States, Australia, South Africa, and other countries which were but thinly populated by Natives before they were settled by white men. Such countries first borrow capital from the outside and pay for the servicing of their debts with exports of raw materials. At the same time they begin to accumulate capital, so that they need to borrow less and less as time goes on. Ultimately, they may even retire all or most of their foreign debt—a position achieved by the United States only after the turn of the twentieth century. Whether this Alaska is possible is by no means certain.

The two types of development are not mutually exclusive: the first type must, from its very nature, result in some settlements, though perhaps not all permanent; the second must furnish a substantial quantity of raw materials to the United States, but over a longer period of time. No doubt the future Alaska will develop somewhere between the two extremes, and the rapid tempo of development characteristic of the whole history of the United States will be balanced by a careful preservation of natural resources.

Another factor in the future of Alaska, little realized in the past but today becoming increasingly evident, is that Alaska lies not at the ends of the earth but with its front door opening on nations of the North Temperate Zone. The Polar Sea has been called by Dr. Vilhjalmur Stefansson "the Mediterranean of future civilization, the middle of the 'civilized' world. . . . The Polar Mediterranean is already more easily crossable by the nations which surround it than the old world Mediterranean was when the Carthaginians and the Romans fought their ancient wars." Thus Alaska, instead of remaining the United States' last frontier, may be already crossing the threshold of a new civilization.

Before any serious development of Alaska from its present pioneer stage becomes possible, much preliminary work still remains to be done. Less than half the Territory is mapped, and there is immediate need of a series of good aerial maps, followed by detailed mapping. A forest and range experiment station will have to be established, fur-farming methods studied, wild life needs investigated, insects and mosquitoes controlled, and more research made into the life habits of fish. Alaska materials need to be tested and analyzed, and a thorough inventory made of lands and their potential uses, of water resources and their possibilities for power, and of transportation needs. From studies such as those made by the Alaska Resources Committee, and from further study, there will no doubt eventually be evolved a sound program for Alaska's development.

In his lifetime the Alaskan has seen the Territory grow from a wilderness to a point where it assumes an entity of its own and begins seriously to consider the problem of its future. In recent years navigation by air has made this land a crossroads of the world, and Sir Martin Frobisher's dream of the year 1576 of opening a northwest passage to Asia has bewilderingly become real. Something of this dizzy telescoping of time is reflected in the character of the towns. What would in the States be a county seat of 2,000 inhabitants becomes in Alaska a roaring metropolis, filled with taxicabs, lined with large shops full of merchandise, boasting a daily paper, banks, insurance companies, office buildings, churches, restaurants, taverns, clubs, movie houses, industrial firms, and an airport. The tempo of Alaska is also reflected in the melancholy ghost towns that loom so bravely on the map, so pitiful in reality, the inhabitants of which have dwindled in a generation from thousands to a scant dozen who live in the shells of false-fronted buildings bearing weatherbeaten signs that boast "tavern," "bakery," or "hotel."

Even seasons of the year present two facets of the double-time world in which the Alaskan dwells. His summers are filled with the gabble of the Iron Chink in the canneries, the beat of fishing-boat engines, the blast of water from the hydraulicking monitors, the slubbing of dredges, the clang of sledges as the points are driven into frozen gravel, and the roar of airplane motors overhead. In the fall, as he packs his grubstake and makes for his trapping cabin, industrial civilization melts like a flake of snow on his cheek.

Bestriding two worlds of time, often isolated from his fellow citizens of the United States and even from his fellow Alaskans, the white frontiersman has something of the character of a westerner of Andrew Jackson's day, but without the Jacksonian's provincialism. He comes of a stock with the north in its blood—the commonest names in the Alaska file of the Social Security Board are Anderson and Johnson. He is self-confident, aggressive, believes all white men his equal and himself the equal of any white man. He hates pretense, and whether wage-worker or capitalist disregards socal distinctions based on property and station—but he is likely to share in the distrust of Orientals and Natives, so common among residents of the Pacific Coast. In spite of his equalitarian turn of mind, he is a stubborn individualist, and beneath an open manner he is lonely, reserved, and resentful of any word or deed he interprets as a slur or slight. He is quick of hand, master of many skills, amazingly well-read, an amusing conversationalist, and the best of good companions.

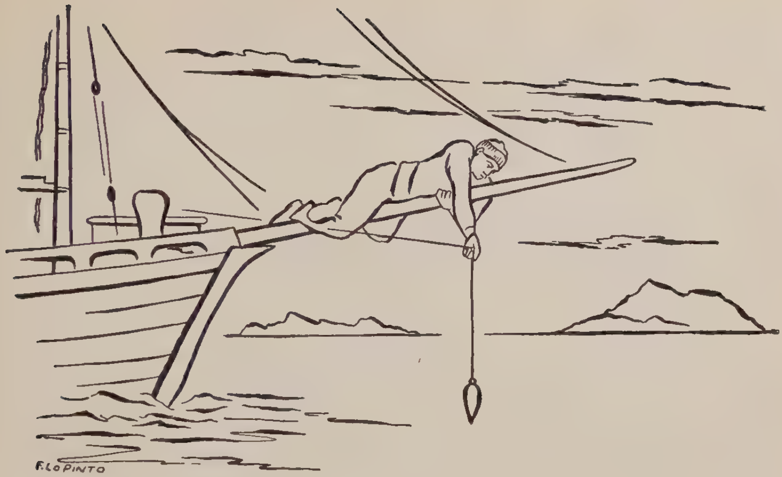
The Native is the survival not only of a battle in time but of a long fight against appalling health conditions, poverty, the crumbling of ancient social patterns and the impact of new ones, perpetual economic insecurity, and the attitude of members of a supposed "superior race."

Each ethnic group retains a strongly individual character marking it off from the rest. The Eskimos are perhaps the most versatile people in North America. Before the coming of the white man they were superb examples of the ability of man to adapt himself to environment. After the arrival of the "Boston men" they became whalers, in less than a generation completely altering their pattern of living. When mass starvation threatened them at the end of the last century, they needed hardly more than a hint to adapt themselves to an entirely new culture—the Lapland reindeer herdsmen's life. Yet their versatility is not accompanied by any weakness of character—they are hardy extroverts with a strong sense of fun. Their neighbors, the

Athapascan Indians of Interior Alaska, are in almost every way the opposite of the Eskimo, with their voicelessness, their hidden, perhaps only half-conscious life, their poetic and decorative genius, their acute introversion. The Aleuts, with their broad, smiling faces, their devotion to the priests of their turnip-topped Russian Orthodox churches, look more like Russian mujiks than the remnants of a great Eskimauan people. Like the Czar's peasants they have a stoic capacity for suffering in silence; like the peasants they are subject to terrible swift rages. The Tsimshians at Metlakatla have developed the most complete cooperative type of living along modern lines to be achieved by any Indian tribe in North America. The Tlingits possess a great unwritten literature illustrated with carved totem poles and objects of ceremony, a few chapters of which have been crudely translated by white men. The Haidas still retain their proud, warriorlike carriage, and their hands are as skillful as ever in combining the utilitarian with the creative in articles for ordinary use.

"The Eskimos and the Indians of Alaska had become masters of their environment before we arrived. We came, learned their methods, adapted their style of clothing and their modes of travel. We, like Kipling's Pioneer, have come back and done the talking. We are called the pioneers. And the Native? Well, he doesn't count." So writes Charles Hawkesworth, of the Alaska Office of Indian Affairs, adding, "Has not the time arrived to change this point of view?"

Perhaps the best comment on Alaska is contained in a news item that appeared in an Alaska paper. "John Swanson returned yesterday on the *Aleutian* from a trip outside. When he left, John claimed that thirty-six years in Alaska was too long. After spending three months in Montana, he figures that a lifetime in Alaska is just about long enough."



2. HISTORY

WHEN SAN FRANCISCO was still a village of mud huts, and long before the American frontier had been pushed to the Pacific Coast, Russian *promyshleniki,* or trader-explorers, invaded Alaska. They had crossed the Urals in the sixteenth century, and by 1640 had reached the Amur and engaged in battles with the Chinese. By 1713 they had overrun Kamchatka and, soon after the 1741 voyage of Vitus Bering, established trading posts in Alaska, writing the last chapter in the great eastward expansion of Russia. Not until the "Boston men," as the Yankee sailors engaged in the triangular trade between New England, China, and the northwest coast were called, began to hunt whales and buy furs along the Alaska coast at the beginning of the nineteenth century, did American relations with Alaska begin. Actual penetration of the interior by Americans did not take place to any extent until long after the purchase of Alaska by the United States, during the gold rushes that began in the late 1890's. Thus the first one hundred fifty years of Alaska's history belong not to North America, but to Europe.

Vitus Bering, born in 1681 of Danish parents and enlisting in the Russian navy while still a boy, was the first to establish that Asia and North America were separate continents. He early fell into disfavor with the Russian court, and since has been called hard names by historians: "imbecile," "timid, hesitating, and indolent," among others. Yet Captain Cook, a thoroughly scientific navigator, later confirmed the accuracy of Bering's observations, writing, "In justice to the memory of Bering, I must say that he had delineated the coast very well, and fixed the latitude and longitude of the points better than could be expected from the methods he had to go by." No man can be called indolent who, like Bering, transported a great provision train and huge quantities of supplies, as well as anchors, cable, and metal for shipbuilding, nearly two thousand inhospitable miles to the wilds at the mouth of the Kamchatka. As to Bering's timidity and imbecility, they resolve themselves, upon reading the accounts of his voyages, into the caution of an explorer who cleaves to his main purpose and has some regard for the lives and health of his men.

Many questions awaited Bering as he started on his first voyage. Was there a northwest-east passage? What was that "great land" from which were occasionally deposited on the coast of Asia great logs of spruce and cedar and the dead bodies of strange animals? What and where were the "streights of Anian" that map makers said separated Asia from America? What lay along the east coast of Asia north of Yeso (Japan)? What was the Pacific coast of America like north of California?

On most contemporary maps, directly opposite Siberia, was a vaguely outlined continent marked *Americæ pars*. The name Anian arose from a misunderstanding by the cartographers of Chapter 5, Book 3, of Marco Polo's *Travels*. Polo's Ania was no doubt the present Anam; but the Dutch cartographers thought it to be northeast Asia, and called the body of water separating the two continents so.

Shortly before he died, Peter the Great of Russia himself wrote down Bering's instructions: "1. At Kamchatka or somewhere else two decked boats are to be built. 2. With these you are to sail northward along the coast, and as the end of the coast is not known this land is undoubtedly America. 3. For this reason you are to enquire where the American coast begins, and go to some European colony; and when European ships are seen you are to ask what the coast is called, note it down, make a landing, obtain reliable information, and then, after having charted the coast, return."

Peter died on January 28, 1725, when a part of Bering's expedition had already started for Kamchatka. Bering followed early in February, and his lieutenant, Chirikoff, started later. Not until nearly three years afterward did the expedition arrive at its starting point—having spent three winters pushing through uncharted country, often suffering from sickness and starvation.

As soon as the worst of the winter of 1727–8 was over, Bering began the building of the *Gabriel,* fitting it with rigging, cable, and anchors his men had dragged two thousand miles over a roadless wilderness. The provisions consisted of "butter" (fish oil), "meat" (dried fish), and "vodka" (spirits distilled from a local grass known as sweet straw). On July 9, 1728, with a crew of forty-four, Bering started on his first exploratory voyage. On August 10, he saw and named St. Lawrence Island. Sailing well within the boundary that today separates the USSR from Alaska, he passed to westward of the Diomede Islands, one of which he saw and named. Here he had his first piece of bad luck, for a fog prevented his seeing North America, clearly visible on bright days, as it was to Cook forty years later. As he could no longer see the coast extending to the north in the same way, he turned back at latitude 67° 18′ north, longitude 193° 7′ east of Ferro Isl. It was late in the season, Kamchatka had to be reached before the end of the summer, the rigging was worn, and the provisions were giving out. Bering arrived at the mouth of the Kamchatka on September 2, 1728.

Wintering on the lower Kamchatka, Bering pondered over his voyage, pieced together stories of the Natives and, from hunters' tales and from the character of the surf, the birds, and the driftwood, decided that there must be a great wooded land to the east. He determined during the following summer to set out and explore it. He made the attempt, sailing very close to Bering Island—one day to be his burial place—but missed the island on account of fog. Buffeted by a severe storm, he was forced to return, but succeeded in charting the coast of Kamchatka.

On March 30, 1730, Bering returned to St. Petersburg. Here began a series of comi-tragic encounters with the scientists of the day. The Academy of Science, young and full of gusto, attacked him severely. Two of its members, the German Gerhard Fr. Mueller and the Frenchman Joseph Nicolas de l'Isle, consulted the maps which they had drawn with the aid of sailors' yarns and their own musings by the lamp, and informed Bering he had not been where he said he had.

Bering, who seems to have been a patient man, journeyed to Moscow to see Anna Ivanovna, who had just ascended the throne. He told her of the great land which he suspected of being part of America, and proposed a Great Northern Expedition to chart its coast and to trade with its inhabitants. The final result of his negotiations was a ukase of sixteen paragraphs that outlined, among other purposes of the expedition, the charting of the whole of the American coast north of Mexico, a visit to Japan, and the charting of the entire coast of Siberia. The hand of the Academy of Science is evident, accomplishing by a few strokes of the pen what actually could be carried out only by generations of Russian, British, French, and Spanish expeditions. Bering was also directed to set up a mail service between Moscow and Kamchatka and the Chinese border, although between Yakutsk and Okotsk, along a distance of 700 miles, there were no roads, not a single Russian hut, and certainly nobody who could read. Only by the intervention of Kiriloff, secretary of the Senate, was the Admiralty prevented from sending Bering to Alaska by way of Africa.

The Academy branch of the expedition included an astronomer, a physicist, a historian, two landscape painters, one surgeon, one interpreter whose acquaintance with all the tongues of antiquity was supposed to equip him to converse with the Natives of Alaska, one instrument maker, five surveyors, six scientific assistants, and fourteen bodyguards. The astronomer alone had nine wagon-loads of instruments, while the Academicians shared among them thirty-six horses, a library that appropriately included *Robinson Crusoe* and *Gulliver's Travels,* and seventy reams of writing paper. The officers were promised, in case of success, large increases of salary and promotions, and the rank and file were threatened, in case of failure, with the knout and exile to Siberia.

To Bering's great credit, he managed to get this learned republic, this earthbound Laputa, safely to the Kamchatka coast. In the ten years between 1734 and 1743 a series of expeditions, all planned by Bering (but most of them not under his command), succeeded in charting and exploring the northern coast of the old world and discovering the new, with the addition of a side trip to Japan.

In May, 1741, the ice broke up and Bering undertook his great voyage to America. He had decided to make his course east by north, which would have fetched him up somewhere along the Aleutians, but was prevailed upon by members of his scientific republic to take a southeasterly course. At latitude 49° 30′ Bering separated from Chirikof, his lieutenant, and kept on in command of the *St. Peter* north and east, sailing parallel to the Aleutians, the deep water giving him no hint of land so near. Finally, on July 16, he sighted Mt. St. Elias in southeastern Alaska, which is about 18,000 feet high, and anchored off the western coast of Kayak Island, which he named St. Elias, not far from the glacier that today bears his name. Here members of his expedition found a timber house, a bark basket, a wooden spade, some smoked fish, and a broken arrow. Bering ordered left by way of indemnity for such articles as he took an iron kettle, a pound of tobacco, a Chinese pipe, and a length of silk. Georg Wilhelm Steller, the naturalist of the expedition, a strong-headed but capable man, wrote, "One can easily imagine how happy all were to see land. No one failed to congratulate Bering, as chief of the expedition, to whom above all others the honor of discovery belonged. Bering, however, heard all this, not only with great indifference, but, looking toward land, he even shrugged his shoulders in the presence of all on board."

On the basis of this passage, historians have accused Bering of weakness and irresponsibility. They have failed to take into account, however, that the man was sixty years old, ill of scurvy—one of the symptoms of which is profound melancholia; that one-third of his crew was down with scurvy; that, being over 56 degrees of longitude from the nearest port, he had to decide at once whether to winter on this inhospitable coast or return immediately. Wisely he chose the latter, and the next day headed southwest, passing the Afognak-Kodiak group July 26, mistaking a small island east of Afognak for a promontory of the mainland and naming it Black Point. He also passed what was probably Chirikoff Island, and somewhat later the Semedi group. On August 7, north of the Semedis, scurvy struck down the remainder of the crew. It was already August, the home port of Avacha was 1,600 miles distant, and September was the extreme limit of time when a safe return could be made. At a meeting of the officers it was decided to leave off charting the American coast and start home on parallel 52°—a decision backed up by the crew, all members signing the resolution.

More bad luck pursued Bering, for head winds set in, and while the ship battled these the water gave out. Bering headed north in search of water, and in three days reached the Shumagins, which he named for a sailor who died there. Bering was now too weak to stand, and his lieutenants were constantly quarreling among themselves. Steller managed to save the lives of the entire expedition by gathering a number of antiscorbutic plants and with an infusion of them restoring Bering and the others. Waxel, in command during Bering's illness, stubbornly refused to allow Steller to send a crew ashore to gather more plants for the return voyage. In the meantime Khitroff, Bering's other lieutenant, left the ship with the yawl and five men to investigate a fire seen on one of the islands, was shipwrecked, and had to be rescued. The wind changed, and, swept along by a storm on the 51st parallel, they saw land again to the north. This was Atka; but they supposed it to be part of the American continent. Says Steller, "The wind seemed as if it issued forth from a flue, with such a whistling, roaring and rumbling, that we expected every moment to lose mast and rudder, or to see the ship crushed between the breakers." The crew was unable to stand watch on account of scurvy, and "their courage was as unsteady as their teeth."

To everyone's astonishment, land kept appearing again and again on the north, as they passed the Aleutians. On October 29th they passed what were probably the Semichi Islands, east of Attu, and on November 4th Copper Island, which they thought was the mainland. Bering wanted to press on—"We still have the foremast and six casks of water," he stoutly remarked. But such was the weakness of officers and crew that the *St. Peter* drifted without a helmsman, finally fetching up off the center of a high, rocky country, with mountains rising straight out of the sea—what is now Bering Island, part of the Komandorski group. Here Steller made his scientific reputation by his splendid description of wild life. But in spite of the fact that Steller once saved the lives of the members of the expedition, and here brought glory to it by his splendid scientific studies of Bering Island, he was even less recognized by geographers than Bering. Not until 1885 was Mt. Steller, on Bering Island, belatedly so named. Mt. Steller, Alaska, about 70 miles west of Mt. St. Elias, perpetuates his name in the western hemisphere as well.

Out of the seventy-seven men aboard the *St. Peter,* thirty-one died, among them Bering on December 8, 1741. "He was, so to speak, buried alive. The sand kept continually rolling down upon him from the sides of the pit and covered his feet. At first this was removed, but finally he asked that it might remain, as it furnished him with a little of the warmth he so sorely needed. Soon half his body was under the sand, so that after his death his comrades had to exhume him to give him a decent burial."

Chirikof, who had parted from his chief off the Aleutian Islands, sailed on to the east in command of the *St. Paul,* and on July 15, 1741, discovered the coast of Alaska just north of its southern boundary, the day before Bering sighted Mt. St. Elias. Near Sitka he lost a landing party among hostile Natives, and decided to return, reaching Siberia after great hardship, as did Bering's men after constructing a vessel from the wreckage of the *St. Peter.*

Prior to Bering's voyage Michael Gvozdef, a surveyor, headed an expedition to the Alaska coast. Little is known about his voyage, but he is supposed to have touched the coast of Alaska near Norton Sound in 1730. No further Russian expeditions were undertaken after Bering's until 1761. After this Seward Peninsula was surveyed. But meanwhile fur traders, hearing of the richness of this new land, began to penetrate the Aleutians as early as 1745. Gregor Shelikof, a merchant and fur trader, sent his men on voyages of discovery as far south as Prince William Sound, Yakutat, and Lituya Bay. He established the first permanent settlement in Alaska at Three Saints Bay, Kodiak Island, in 1784. Two years later a second one was made by the Russians on Cook Inlet at the mouth of the Kasilof River. In the early nineteenth century Golovnin, von Kotzebue, and Etolin explored the western Alaska coast, Nasilef explored the Kuskokwim, Glazunof explored Norton Sound and the mouth of the Yukon, and Malakoff and Zagoskin ascended the Yukon to Nulato.

Spain, intrenched in Mexico and California, found it easy to send expeditions to the north Pacific coast, and between 1774 and 1794 Spanish navigators explored southeastern Alaska. Bodega y Quadra made two excursions to this region, the second in 1779, contemporaneously with the Englishmen Cook and Vancouver. La Pérouse headed the sole French expedition to Alaska in 1786, covering much the same waters in southeastern Alaska as the others.

Meanwhile, England had not given up the search for the Northwest Passage begun by Sir Martin Frobisher in 1576, as such a trade route would enable England to compete with Spain in the Indies trade. After Frobisher, generations of Englishmen continued the search: among others, Davis, Weymouth, Knight, Hall, Hudson, Baffin, and Cook. Captain James Cook made a northwest voyage in 1778, sailing into the Arctic Ocean until halted by the ice, correcting Bering's reckonings and establishing new ones so accurate as not to be altered by later navigators. In the north, the Englishman Beechy in 1826 sailed as far as Point Barrow, to which he gave its name. In southeastern and southwestern Alaska, Meares, Portlock, and Dixon surveyed the coast. George Vancouver, who had sailed on Cook's northwestern voyage, returned to Alaska in 1791 and so accurately charted the bewildering coast and coastal islands of the southeast that his maps remained in constant use for fully one hundred years. But the Northwest Passage was not accomplished even by Sir John Franklin, who died on the ill-fated expedition in 1847. Not until 1906 did any navigator sail from the Atlantic to the Pacific, when the Northwest Passage was finally completed by Roald Amundsen, in his sealing sloop *Gjoa,* the voyage taking three years. In 1931 it was flown by the Lindberghs in stages, the entire journey from New York to Tokyo taking less than a month.

Permanent occupation of Alaska by Russians rested on the economic base of trade in furs. The fur traders ruled by the sword and the knout, reassuring themselves with the Russian proverb, *God is on high and the Czar far away.* The protests of the Aleuts resulted in no visible sign of anger from Heaven, but they reached at least the ears of the Little Father, who in 1794 threatened to withdraw trading franchises from the *promyshleniki.* Five years later Emperor Paul gave the exclusive rights to a new trading corporation, headed by Gregor Shelikoff, the Russian America Company, on condition that it promote discovery, commerce, and agriculture, and the propagation of the Greek Catholic faith. From 1799 to 1863 the company virtually ruled Alaska. Alexander Baranof, a drygoods salesman of Siberia, was chosen as chief director of the company, with residence at Kodiak; and for twenty years this man was master of all Alaska.

Baranof organized the country into six districts, and his word was sole law. He enslaved the Aleuts and made war upon the less docile Indians. He established trade relations with the English, Americans, and Spanish, and sent his trading ships, fourteen of which he built and launched from Alaska ways, to Japan, Hawaii, and Mexico. A man of iron will, energetic, shrewd, and a competent administrator, he founded, according to the terms of the charter, churches and schools, and promoted discovery and agriculture, but above all trade, trade, trade! When he had exhausted the natural resources of the Aleutians he moved his capital to Sitka in 1802, and from his wooden "castle" on the hill surmounting the harbor made Sitka the most brilliant capital in the new world. Yankee sailors, thrashing around the Horn, beating their way up the California coast, anchored at last in Sitka harbor and found the city an American Paris, its streets crowded with adventurers from half the world away, its nights gay with balls illuminated by brilliant uniforms and the evening dresses of Russian ladies.

The Tlingits of the Sitkan archipelago, unlike the milder Aleuts, fiercely resisted the advance of the Russians, and in May, 1802, massacred most of a party at Old Sitka. New Sitka was then established and thoroughly fortified. As the Archangel Gabriel, to whom Old Sitka had been dedicated, had failed to protect it against the heathen, the new capital was entrusted to the care of the Archangel Michael, and for some years the town was known as New Archangel.

Slowly the Russians expanded in western, southern, and southeastern Alaska, establishing settlements or trading posts in Sitka Sound, Prince William Sound, Cook Inlet, Kodiak, on five of the Aleutian Islands, on the Pribilofs, at Nushagak in Bristol Bay, and even in California. Meanwhile, explorations were being made up the Copper River, along Bristol Bay, and into the Arctic Ocean.

Baranof, who now controlled settlements and trading posts as far north as Bristol Bay and as far south as Ross, California, had concluded a commercial agreement with the American fur-trader Astor, and became ambitious of extending his trade to the Sandwich Islands. He was displaced in 1818, however, by the Russian navy, which wished to arrogate to Russia alone the rich trade of North America. Baranof died on the return voyage to Russia at the age of seventy-two, and was buried in the Indian Ocean.

Under the rule of the Russian navy foreigners were barred from Alaska, and a ukase of 1821 attempted to close the whole coast north of 51° to all but Russians. England and America resented this, and the United States was successful in 1824 in securing an agreement of equal trading privileges for ten years north of 54° 40′. Baranof's trading post at Ross, California, was sold to John A. Sutter, owner of the mill where gold was discovered in 1849.

In this period there arrived at Unalaska Father Innokenti Veniaminoff, who worked for seven years among the Aleuts. He learned their language, and established the foundations of Alaska anthropology, which still makes use of his writings. The Aleuts adopted the religion of their conquerors, according to Dall, because they felt that a God who could save from eternal torment such cruel men as their Russian masters must be remarkably efficacious and powerful. "However this may be, in Veniaminoff came a man who dealt justly and loved mercy. . . . He learned their language, studied with affectionate comprehension their manners and customs, recorded the climatic and physical conditions under which they lived, and in his *Notes on the Unalaska District* has built the only existing foundation for the anthropology of the people he served so well."

The sale of Ross and the death of Baranof coincided with the end of the great period of Russian expansion. Alexander the First was involved in the Napoleonic wars and in putting down the restless serfs. Alaska remained Russia's only maritime province, and after 1863 the Russian government refused to renew the charter of the Russian America Company.

The westward expansion of the United States, however, was beginning, and one of the symbols of this expansion was the Western Union Telegraph Expedition to Alaska in 1865-7. Successively laid Atlantic cables had failed to work, and an alternate plan was proposed of laying a cable overland north through British Columbia, up the valley of the Yukon, across Bering Strait into Siberia, and thence south to Europe. Russian consent was secured. Robert Kennicott, in charge of the expedition, was succeeded after his death by William H. Dall, the explorer and historian, and Frederick Whymper, author of *Travels in Alaska*. From their surveys the interior of Alaska was mapped for the first time, and much knowledge concerning the resources of that unknown country made available. In 1867 the Atlantic cable began to operate successfully, and the Western Union expedition withdrew from Alaska. Partly as a result of this expedition, purchase of Alaska was being discussed in the United States.

President Polk had been elected in 1846 on a high tide of nationalism exemplified in the campaign cry, "Fifty-four Forty or Fight." The frontier now dictated American foreign policy, and Polk's attempt to claim American territory on the Pacific coast north to the Russian possessions almost led to war with England. American whalers and trading vessels operated illegally but openly in Alaska—

an odd touch in history is the cruise of the Confederate war vessel *Shenandoah* in the Arctic in 1865 and its shelling of Yankee whalers. The Hudson's Bay Company had been operating in Alaska for half a century. Weary of its American province, Russia, according to a speech in the United States Senate by Charles Sumner, "wished to strip herself of all outlying possessions as Napoleon had stripped himself of Louisiana, in order to gather her strength for her struggle with England for the control of Asia." Russia was also quite aware, as Napoleon had been, that if it did not soon sell its American possession it would lose it, without profit, to England.

The mystery is not why Russia wished to sell, but why the United States wished to buy. The answer lies probably in the tremendous pressure the expansionist-minded frontier at this time exerted on policy at Washington. Indications of its temper were seen in the organization in San Francisco by Louis Goldstone of a fur company to succeed to the lease of the Russian America Company which later became the great rival of the Alaska Commercial Company, and the memorializing of Congress by the legislature of the Territory of Washington in an attempt to secure fishing rights in Alaska. It appears that the Russian representative, Baron Stoeckl, spent upwards of $200,000 in the United States to enlist legislative support for the sale, reimbursing himself from the purchase price of $7,200,000, and forwarding to the Russian government $7,000,000. Charges of bribery of public men and of newspaper publishers and correspondents in five cities were freely made but never fully proved. According to Golder, when the Russian ambassador left the United States he expressed himself cynically as sick of the corruption of congressmen and other public men and as hoping that some day they would be worthy of the country they represented. According to Clark's *History of Alaska,* a full examination of all the details of the purchase leads to "the inevitable conclusion that the chief reason for the United States buying Alaska was William H. Seward," the American secretary of state. At any rate, a new step in American policy—expansion beyond the territorial limits of the United States—had been taken. "It is certain," adds Clark, "that the purchase of Alaska was not made in any spirit of farsighted policy, yet by almost stumbling into a treaty, we have wrought far greater than even Seward, its most enthusiastic supporter, ever dreamed."

As salutes were being fired and the American flag hoisted at Sitka on October 18, 1867, an astute American, H. M. Hutchinson, was receiving the rights and property of the Russian America Company, which he had purchased. His enterprise, incorporated in 1870 as the Alaska Commercial Company, for twenty years had a virtual monopoly of the Alaska fur trade, especially fur-seal taking on the Pribilofs.

From 1867 to 1897 Alaska fell into official neglect. "No American ever made a reputation founded upon his knowledge of territorial affairs, and his success in administering them," remarks Paxson in his *History of the American Frontier,* and the early administration of its maiden colony by the United States was no exception. Kipling's line, "There's never law of God or man runs north of 53," refers to this period of Alaska history, flatly called by Clark "the reign of lawlessness and corruption that we encouraged." "A history of conditions in Alaska from 1867 to 1897 is yet to be written," remarks Dall, "and when written few Americans will be able to read it without indignation." During these days Alaska was "a country where no man could make a legal will, own a homestead or transfer it, or so much as cut wood for his fire without defying a Congressional prohibition; where polygamy and slavery and the lynching of witches prevailed, with no legal authority to stay or punish criminals." Not until the appearance of Jeannette Nichols' *History of Alaska,* in 1924, was a detailed history of these years offered to the general public.

The stampeders to southeastern Alaska and the Seward Peninsula in the late 1890's and early 1900's, although technically without civil authority, created their own form of local self-government. Just as the New England settlers, three hundred years before, had set up their town meetings, so the miners organized their "miners' meetings" to enforce order, settle boundary disputes, and administer rough and ready justice. Too often this form of government failed to cope with thousands of stampeders milling about a town with accommodations for a scant hundred, and in more than one instance miners' meetings were broken up by army officers. Yet the profound instinct of the American people for self-government and their tradition of democracy made local self-government effective until the creation of the Alaska Legislature in 1912.

English-speaking missionaries appeared in Alaska before the purchase. In 1862 Archdeacon Robert McDonald of the Church of England arrived at Fort Yukon, learned the local dialects, and translated the scriptures into Tinneh. The Rev. J. L. Prevost, Episcopalian, issued from the *Yukon Press* the first book printed in the Yukon Basin, a hymnal in Tinneh. The first Episcopal bishop of Alaska was Peter Trimble Rowe, who was sent to Sitka in 1896. The Presbyterians established missions in southeastern Alaska about 1878, and one of their leaders, Sheldon Jackson, who later became general agent of the Bureau of Education, first introduced reindeer into Alaska. The Rev. Samuel Hall Young, dean of Presbyterian missionaries in Alaska, published articles and books descriptive of its life. Catholic missions were established in 1877 by the Rev. J. Charles Sehgers, and a number of Catholic missionaries made valuable contributions to the ethnology of the Tinneh and Eskimo. The Baptists established missions in southeastern Alaska and at Kodiak from 1898 on, as did the Methodists in the southeast. The Moravian Church established missions along the lower Kuskokwim and in Bristol Bay about 1885, when most of this region was practically unknown to Americans, and made some important ethnological research among the Eskimos on the Kuskokwim.

Gold was discovered in the Canadian Klondike in 1897. But this stampede was somewhat reduced by the Spanish-American War in 1898 and by the enormous difficulty of reaching the Klondike area. A majority of the Klondike prospectors came from the United States, and those who were not successful on the Dawson creeks drifted down the Yukon into Alaska, and from the mouth of the Yukon fetched up at Nome. In 1899, too late to organize prospecting parties for that year, gold was found on the beach at Nome between the low- and high-tide levels. Here was gold that could be simply washed out of sand—gold not at the end of a strenuous journey over mountains and unmapped plains but on a beach near which ships could anchor. Moreover, the General Land Office decided that claims could not be staked in land below ordinary high tide, so that the right to pan gold here was as free as the right to fish, as available to the latest comer as to the first.

The transportation companies, charging $125 for a one-way passage to Nome and $40 a ton for freight, announced that the golden sands were twenty to twenty-five miles wide and two hundred fifty miles long. Thousands of people (claimed the advertisements) were earning $300 a day and many more than that; in the tundra, diggings ran $4,000 to the ton, and $500 nuggets were to be found; on the beach itself "gold clung to the ship's anchors when they were drawn up." No wonder that by June, 1900, ten thousand gold seekers had left Tacoma and Seattle for Nome. Twenty-five thousand more were expected during the summer at the New Eldorado, advertised as a peaceable town with "five or six policemen and a whole regiment of United States soldiers," a number of good hotels and "no theatrical shows."

The appearance of smallpox on steamers returning from Alaska in July was the first indication that all was not perfect in the new land. The captain of a revenue cutter reported that there were no cases ashore, but that an epidemic of typhoid was expected. He added tersely that there were ten thousand people on the sands at Nome without money or work or any prospect of a paying claim.

By August, reports about Nome reached the United States in letters from the prospectors. Gold there was—in a narrow strip of beach three-quarters of a mile long. Five hundred men were working this, earning from five to ten dollars a day. There was gold in the tundra, but the ground had to be thawed before it could be worked —and coal cost $150 a ton. Nome City consisted of two filthy streets without a sewer or even a ditch. Aimless, restless crowds milled through them. Drunkenness and gambling were everywhere, murder an almost daily occurrence. Men were shot down in the center of town and no arrests made. For three miles along the beach there were tents, twenty deep. Gold seekers were still arriving at the rate of almost a thousand a day, and there was not even tent room for them. Women and children were sleeping uncovered on the wet sands. Thousands of tons of every conceivable kind of freight lay in inextricable heaps on the beaches, unprotected from tide and theft. There were no sanitary arrangements, and the drinking wells, from three to fifteen feet in depth, were contaminated. Twenty-seven cases of smallpox were reported by the authorities in July, and typhoid and pneumonia were already beyond control. The pesthouse was full and refusing to take more cases, and quarantine was impossible. An old miner wrote to the Treasury Department late in August to say that Nome was not as black as it was painted. He insisted that there was gold, he had seen diggings worth sixty dollars a ton; there had only been twenty cases of smallpox; in six weeks there had been only twelve violent deaths, and several of these were suicides.

Fur traders complained that fur taking had been cut in half by prospectors who had killed the animals for food. Faced with the disappearance of game, the Eskimos were naked and without food. The census taker had visited seventy-four Indian villages and seen only three fires; there was sickness in every tent, and some villages were more than half wiped out by fever. Governor Brady believed that the epidemic was "lagrippe attended by measles and pneumonia," and added that the diseased Natives "become stupefied and utterly helpless and lie down to die." Anywhere from twenty to forty thousand people were stranded on the beach at Nome. Many of them had spent every cent they had for a one-way passage. Some were taken back to the States on revenue cutters, but others remained in Alaska to look for gold in the Tanana district, or to work on the railroads in the south. The golden tales of fortunes to be won in the north ignored the thousands of luckless stampeders who perished in the Klondike, and on Valdez Glacier from 1898-1900.

In the wake of the great gold stampedes came the discovery of Alaska by the fictioneers and their public. Over the Chilkoot pass with the stampeders in '98 came about a hundred young newspaper men and a few women, who quickly acquainted American readers with the hardships and romance of the trail. Among them were Robert W. Service, Margaret Rambeau, Joaquin Miller, Francis Barrett Willoughby, Rex Beach, Jack London, Jack Holt, and Sam C. Dunham. Jack London's first story about Alaska, "A Klondike Christmas," was published in the *Overland Monthly,* January, 1899, and by 1905 he had published six books and dozens of short stories. Kipling used Alaska as a subject for a poem and two short stories.

Before the spruce trees could be cleared from the townsite of Dawson, a newspaper was being sold to the stampeders. Newspapers had long been issued in Alaska—*The Esquimeaux* appeared in 1866 as a manuscript newspaper for circulation among members of the Western Union Telegraph Expedition, and was later printed at San Francisco. The first commercial newspaper in English was the *Alaska Times,* issued by Thomas G. Murphy, a tailor, at Sitka in 1868, and edited by William Sumner Dodge, the town's first mayor. The *Yukon Press,* appearing on January 1, 1893, was the first paper of the Interior, edited by the missionary, the Rev. J. L. Prevost, at St. James Mission at the mouth of the Tanana, and issued with the help of such pioneers of the Yukon as Jack McQuesten, Al Mayo, Al

Harper, and Gordon C. Bettles. The *Alaska Free Press* was established in Juneau in 1897, and after the great stampede that came the following year, many newspapers were begun along the Yukon Trail. A literary paper, the *Rampart Forum,* was published in 1898 by a group of writers who had failed to locate a paying claim on the Klondike and had drifted down the Yukon as far as Rampart, because it was too much work to pole upstream. The magazine cost, in mimeographed form, a dollar a copy, and was well worth it, as among its contributors were Jack London, Rex Beach, and other writers who later became well known. The staff took the first boat down the Yukon in the spring of 1899 and migrated to Nome. The *Nome News* was first published in October, 1899, by J. F. A. Strong, later governor of Alaska. In all, over 200 newspapers and magazines have been issued in Alaska since 1866.

Some means of transportation to the Interior still had to be devised that would not take frightful toll in lives of stampeders. Some previous exploration had been done by Americans. The Alaska Commercial Company, founded in 1869, contributed considerably to the knowledge of southwestern Alaska. The Western Union Telegraph Expedition had established a route along the Yukon Valley. The first steamboat ascended the Yukon in 1866, and in 1869 Capt. C. W. Raymond, of the United States Army, led an expedition up the river to determine the position of Fort Yukon. John Muir the naturalist, with Rev. S. Hall Young, explored parts of southeastern Alaska in 1879. The following year Ivan Petrov, an agent of the tenth census, made his great report on the geography, population, and resources of Alaska. Lieut. Frederick Schwatka crossed the Chilkoot Pass in 1883 and arrived at the source of the Yukon, which he navigated to its mouth. Lieut. Henry T. Allen made a remarkable expedition in 1885 in the Copper River and Tanana Valley regions, living off the country with his party. After the discovery of gold in the Klondike region of the Canadian Yukon, a series of trails was laid out by army officers. Capt. P. H. Ray and Lieut. Wilds P. Richardson made an expedition in 1897-8 in the Canadian and American Yukon valleys. When stampeders started to struggle over the Valdez Glacier on the way to the Copper River country, Captain Abercrombie from Valdez and Captain Glen from Cook Inlet surveyed trails; and Lieutenants Lowe, Castner, and Herron, among others, made successful expeditions in this area.

Many other army officers led expeditions surveying trails, and in 1903 the army completed a cable connection with the United States.

Long after the first gold rushes, Alaska was still without any real road throughout its entire area. Travel was largely made by boat or pack train in summer and by sled in winter over dangerous and lonely trails. In 1905 Congress established a board of road commissioners for Alaska. Liberal charters were offered by the Federal government to any company that would undertake to build a railroad. After a few years of encouragement, confidently predicted the *New York Tribune,* Alaska would be gridironed with steel highways. "The fertile valleys and lonely wastes of that great Territory are being awakened by the shriek of the construction locomotive and the subdued roar of the steam shovel."

The White Pass and Yukon Railway, under the joint jurisdiction of the United States and Canada, connecting Lynn Canal with the Yukon, was already in operation. But the "shriek and roar" of railroad planning was most active in south central Alaska. At least five companies proposed lines to run from the Gulf of Alaska to Fairbanks or the Upper Yukon. There were only two possible routes—the railroad would have to follow either the Susitna or the Copper River basin. The only serious problem was the harbor terminus. There were few possible harbors in the Gulf of Alaska. The best of these was on Resurrection Bay, and there the Alaska Central began construction, booming the town of Seward and laying a road toward the Susitna as far as Turnagain Arm.

Four companies were trying to build along the Copper River. At Valdez, "New York capital with extensive holdings in copper and gold and plans for fisheries and steamship lines" was beginning railroad construction. The same group also had a right of way from Katalla and started construction on these routes simultaneously. Both presented engineering problems. From Valdez there was a difficult mountain pass. At Katalla there was no harbor, and it proved impracticable to build a breakwater. In the meantime two engineers who had worked on the White Pass Railway started a railroad from Orca (later named Cordova). This route was bought by the New York company when seven miles of track had been laid. The Copper River and Northwestern Railroad was then built from Cordova to the Kennecott copper mines, a run of about 200 miles. The "New York capital" referred to was organized in 1906 as the Alaska Syndicate. The Syndicate was primarily a copper company but it also had extensive holdings in the salmon industry and controlled, with one exception, the Alaska steamship lines.

The fourth company attempting a railroad along the Copper River was the Alaska Reynolds Company, which capitalized on the enthusiasm of the people of Valdez, who were left stranded when the Copper River and Northwestern took Cordova for its terminus, and sold stock in the United States on the basis of antimonopolistic propaganda—an "honest" railroad would be built from the coast to the Interior and the powerful companies would be thwarted. Governor Brady, whose position and naïve honesty gave weight to his endorsement, became a member of the board of directors and wrote a personal letter addressed to the investors, whereupon the secretary of the interior asked him to withdraw his name from the company's advertising.

Before 1900 the Copper River Company had asked the government for militia to protect its abandoned right of way from Valdez but was refused, and by 1904 it was freely said that the company would fight to prevent any other company taking over the Keystone right of way. Surveyors for the Reynolds Company entered Keystone Pass in 1906, and one was shot by an employee of the Syndicate, Hasey. Hasey was tried and given a short sentence. This was a vital issue in Alaska politics as late as 1912.

Meanwhile, the Alaska Reynolds Company had failed and the project of a railroad from Valdez to Fairbanks was abandoned. But the Keystone Canyon episode crystallized public opinion in Alaska against the Syndicate, and for many years a stand against "big-business" on the part of any Alaskan in public life assured him of immediate popularity.

Congress passed a fisheries bill in 1906 in an attempt to conserve the diminishing supply of salmon. One section of the bill, drawn up by an officer of the Alaska Syndicate, provided a rebate on canning taxes for companies that maintained private hatcheries. Although the rebate represented only a portion of the sum being spent by the companies to conserve Alaska salmon, it took money from the Alaska Fund that would otherwise have been spent on roads and schools, and so increased the unpopularity of the Syndicate, which, in addition to being charged with failing to build the railroad and with controlling the administration of justice, was accused of diverting public money to its private ends. When in 1906 Alaska was allowed an elected delegate, the election was won by the candidate who ran on an anti-Syndicate platform. At every election there were charges of irregularities in the voting, of intimidation by the Syndicate, of employees discharged on political grounds. "The Syndicate" and "Washington" had become interchangeable terms of abuse employed by the citizens of Alaska, and "home rule" their battle cry.

The United States coal-land laws had been made applicable to Alaska in 1900, but these laws required public surveys in order to locate a claim, and there were no surveys in Alaska. In 1904 private surveys were permitted and claims accepted at two dollars an acre, individual holdings being limited to 160 acres and company holdings to 320 acres. Such a claim was too small to justify railroad building and no claims could be worked without railroads. The unworkable laws bred subterfuge, and this, coupled with the private nature of the surveys, produced a situation that Congress could not control. In 1907, accordingly, all coal lands were withdrawn from entry, and railroad construction stopped.

Both railroads under construction ran close to coal fields and had counted on coal lands to pay for their building and operating. The Alaska Central, starting at Seward, ran to within eighty miles of the Matanuska coal fields. When these lands were withdrawn the company ceased building. Transportation from Seward to Turnagain could not maintain a railroad, and in 1909 the company failed. The Copper River and Northwestern ran within thirty miles of the interior Bering fields. Carrying copper from the Kennecott mines to Cordova, which was the primary purpose of the railroad, kept it in operation, but it was unable to begin work on the Fairbanks branch until the coal fields should be opened to make this a profitable run.

In 1907 Congress began to consider a bill for a government railroad to connect the Gulf of Alaska with the Yukon, near Eagle; a bill opposed both by the Alaska Central and the Copper River and Northwestern. A spokesman for the Alaska Syndicate explained that no subsidy was necessary, and that the effect on the stock market of the proposed railroad would "in a measure kill all of the enterprises heretofore started. . . . Congress could not very well subsidize a railroad when private companies were anxious to build without subsidy." As an alternative, it was proposed that the government back bonds of companies undertaking to build in Alaska. But the

Alaska Syndicate needed no such backing, and this proposal was also defeated.

The Taft administration faced three important problems in connection with Alaska: its government, its railroads, and its coal. The people of Alaska believed that if the first of these were properly solved —if Alaska were given home rule—they could handle the other matters themselves. President Taft's opinions on the administration of Alaska were waited for anxiously. Taft appointed Governor Clark, who reassuringly declared, "Equal opportunity must be offered, within the limits of their respective abilities, to rich and poor alike." In 1909 Taft visited the Alaska Exposition in Seattle, found the display "most attractive," and suggested that the administration of Alaska be put under the Bureau of Insular Affairs of the War Department. This, he explained, was "practically the government which was given to the Philippine Islands."

The words were ill chosen. If the people of Alaska had any doubts about their position, the fact that they were classified with Malayans made it clear enough. That the President should think of governing Alaskans as the United States governed Asiatics was humiliating to men bred to believe in the "yellow peril." That it was also impractical was proved during the Taft administration.

The Republican party split largely over this issue, and Taft was baldly accused by Senator Dolliver of being too close to men "who knew exactly what they wanted." In drafting the bill to place Alaska under the Bureau of Insular Affairs of the War Department, Taft refused to see the elected Alaska delegate, saying he had made up his mind on the subject and no interview would change it. The bill was defeated in Congress. Another bill was drawn giving corporations with contracts to, or through, any coal fields the right to lease five thousand acres of coal land in addition to those already held. To Alaskans this seemed to give the Alaska Syndicate five thousand acres of coal in addition to the twenty-five hundred acres they were suspected of having acquired, and no senator would introduce the bill. Instead, the House authorized an investigation of Alaska exploitation. Beginning as one of the monopoly inquiries characteristic of the "trust-busting" era, the investigation speedily widened into a battle between those who believed in unhindered private exploitation, led by Secretary of Interior Ballinger, and those who believed in the conservation of natural resources, led by Chief Forester Pinchot. The resulting struggle resounded in the press, brought Alaska to the attention of the whole United States, and filled the Taft administration with scandals. After the mid-term elections, Congress in 1912 by the Organic Act, seen through both houses by Alaska Delegate James Wickersham, gave the Territory a local legislature. The powers of this legislature were severely limited in an attempt to protect the infant Territory from unscrupulous corporations, and infant industries from unscrupulous politicians. But the people of Alaska had at least won the beginning of a democratic government.

During the years immediately following the Organic Act, Alaska suffered a series of purely physical upheavals. In the summer of 1912 Mt. Katmai exploded, covering near-by regions with layers of volcanic dust, desolating Kodiak Island, and creating the Valley of Ten Thousand Smokes. Soon after, an earthquake shook Fairbanks, and in the fall of 1913 Nome was almost destroyed by a hurricane.

The government-built Alaska Railroad was authorized by Congress in 1914, and in July, 1923, President Harding, the first president of the United States to visit Alaska during his term of office, drove the golden spike at Tanana Bridge that marked the opening of the line.

Meanwhile, the white population of Alaska had undergone rapid shifts. In 1897-8 the town of Skagway was created overnight, and soon had a population of 15,000. In 1899-1900 gold-mad chechakhos were dumped by the thousands on Nome beach. There had been only about 4,000 white Alaska residents in 1890, but by 1900 they had increased to about 30,500. Gold was discovered near Fairbanks in 1902, in the Iditarod district in 1908, and in the Ruby area in 1907-10. Each of these new discoveries brought new residents, and in 1910 the white population reached the high-water mark of 36,400. Meanwhile another source of Alaska wealth—salmon fishing—had increased. In 1899 the number of cases of salmon packed in Alaska first crossed the million mark, and thereafter increased year by year to almost two and one-half millions in 1910.

In the following decade, Alaska began to cast off its boom character and to build more solidly on its natural resources. Although the Territory lost nearly 10,000 white residents between 1910 and 1920—the white population in 1920 dropping to 27,883—more salmon were packed year by year, the seal herd on the Pribilofs, approaching extinction in 1910, began to increase after the Federal government took it over, and pelagic sealing was stopped. The application of modern methods to mining put the extraction of minerals from the earth on a sound, predictable basis. The war years, after some distress, resulted in an expansion of all Alaska undertakings.

Socially and culturally the life of Alaskans, both white and Native, reflected this transition from a boom Alaska to a slower but surer rate of development. Fraternal organizations, including the Arctic Brotherhood, the Pioneers of Alaska, the Pioneer Women of Alaska, and the Arctic Native Brotherhood, as well as fraternal orders common to Alaska and the United States, grew and flourished. The cornerstone of the Alaska Agricultural College and School of Mines, later to become the University of Alaska, was laid on July 4, 1915, and the college issued its first bulletin in 1922, and its first catalogue and its student newspaper, *Farthest North Collegian,* in 1923. Alaska presses began to issue books and magazines in respectable numbers, all towns of any size had at least one newspaper, public libraries were established, the system of grade and high schools was extended, and the airplane and the radio began to revolutionize transportation and dissipate provincialism.

With the election of President Harding in 1920, the Federal policy toward Alaska changed. Secretary of the Interior Fall, in February 1922, explained that the administration did not favor government operation of railroads in Alaska or anywhere else, and pled, "Help us liberalize the laws and open up Alaska that the boys back from the War can do what their forefathers did in California in 1849. . . . Oil has been flowing into the Arctic Ocean at Cape Fleming for years, perhaps centuries. What is believed to be one of the greatest oil fields in the world is in the Arctic near the Aleutian Islands."

Hints of corruption in the Harding administration cast considerable suspicion as to the disinterestedness of Secretary Fall's desire to exploit Alaska oil, and during the summer of 1923 Harding made a tour across the United States and to Alaska, in an effort to reawaken popular confidence in his administration. He announced that upon his return from Alaska he would decide whether "to call on Congress for further appropriations to open up the Territory or to throw open the resources of the country to private development." After his visit to the Territory, he surprised his associates and the public by announcing a policy of thoroughgoing conservation. He called for large appropriations for agriculture and roads, for conservation of timber, fish, and other natural resources, and for the continuance of government operation of the Alaska Railroad. We must, he said, "regard life in lovely, wonderful Alaska as an end and not a means," and reject the policy of "looting Alaska as the possibility of profit arises," and of "turning Alaska over to the exploiters." Harding died a week after his Seattle address, and his death and the Teapot Dome scandal so occupied the public mind that what Harding had said about Alaska attracted little attention.

Only a year later the Department of the Interior was again complaining that the Alaska Railroad was not "a financial success." In his message to Congress in 1925 President Coolidge pointed out that the cost of administering the Territory was "so far out of proportion to the number of inhabitants as to indicate cause for thorough investigation." The administration of Alaska was accordingly centralized in 1927, when the three departments of Agriculture, Commerce, and Interior each appointed an administrative officer to reside in Alaska, with authority to decide on Alaska matters without referring to Washington. The President was given authority to transfer any bureau function from one department to another by executive order. This reduced friction among governmental agencies, and at the same time greatly reduced the publicity given to Alaska affairs in the United States. Meanwhile, the Alaska Legislature, whose first act had been to legalize woman suffrage in 1913, passed a series of liberal social, labor, and conservation measures, showing that the Alaskans, even if they did not possess statehood, were capable of wisely administering their vast Territory. The census figures of 1930 showed a small but apparently permanent growth in white residents; and the population increase among Natives, of over 3,000 in the decade, indicated that at last the Natives were beginning to win their long battle against poverty and disease. Exports to Alaska, imports from Alaska, and the production of gold, all showed growth from 1922 to 1938. New farm lands were opened up, and permanent agricultural residents settled on the Kenai Peninsula and in Matanuska Valley. A threatened encroachment of Japanese fishing vessels in Alaska waters ceased in 1938, when Alaska fishermen answered the question "Are salmon American citizens?" in the affirmative by announcing the purchase of high-powered rifles and ammunition to protect fish citizenship. A new industry—the tourist trade—grew apace, and some 35,000 visitors traveled to Alaska every summer. In the rush of visitors to the last frontier the *New York Times* could urge good-naturedly, "Beyond the mountains some mystery should be left, unprofaned by motor car, glimpsed by plane perhaps from afar, but penetrable only afoot or in the saddle, a sanctuary for wilderness lovers of the years to come."

NORTHERN ALASKA
TRADING COMPANY
IDEAL ROOMS
DAY · WEEK · MON
3
F. LOPINTO

3. THE PEOPLE

Population—The Whites—The Natives—Labor

POPULATION

THE POPULATION of Alaska on October 1, 1929, according to the Fifteenth (1930) Census, was 59,278. This was the most complete census of the Territory ever made. The first enumeration under United States rule was made in 1880 by Ivan Petrof, who undertook not only the tabulation of the population but "an account of the occupations, modes of subsistence of the people, their dietary, dress, etc., indicating a proportional consumption of domestic and imported articles; their religious and educational institutions, with all statistical information relative thereto which might be available, together with such matters of economical and social importance" as seemed necessary, Districts that Petrof could not cover in person were reported by priests and local observers. Similarly, in 1890 estimates of the population of all areas that could not be canvassed personally were based upon local records and personal knowledge of missionary priests.

Some of the difficulties in taking the Alaska census of 1900 have been related by one of the enumerators, Guy M. Stocklager. The short trip of ninety miles from Nome to Golovnin Bay alone took two weeks. There were five portages, "and at each portage we were forced to make two or three trips to get our outfit on the top of the mountains, but going down on the other side one trip was generally all we wanted, as in nine cases out of ten we would land in a bunch of willows at the bottom, sled overturned, dogs fighting, and the other two boys swearing." "Alaska is the worst country in the world for downright swearing," painedly observed Stocklager, relating that he encountered a pious Dutchman who had solved the problem by naming his dogs with familiar four-letter-words, enabling him to "mush" all winter without offending his conscience. The chief difficulty in taking the census of the whites was enumerating the men on the trail. "Unless one is personally acquainted with them they seldom speak, since they are, as a rule, in bad humor and hate to be detained on any account." One sourdough living up Fish River with an Eskimo woman threatened to bore Stocklager full of holes if he listed them as man and wife—he had a wife in the States and thought she would see their names appearing in the Twelfth Census.

Stocklager compromised in such cases by calling Eskimo women "housekeepers." In the face of many obstacles, each succeeding enumeration has been more nearly complete and accurate. The 1940 census will be undertaken in 1939, in view of the length and difficulty of the task.

In 1890 the Native population was 23,531, the white population only 4,298. The Native population has remained relatively stationary, increasing to 29,536 in 1900, declining to 25,331 in 1910, then increasing to 26,558 in 1920 and to 29,983 in 1930. The white population, on the other hand, has fluctuated greatly. From a low of 4,298 in 1890 it increased during the gold-rush era to 30,493 in 1900 and 36,400 in 1910. By 1920, however, the white population had declined to 27,883. It rose slightly (28,640) in 1930, and by 1938 probably had risen again to more than 30,000. The population other than Native or white (Negro and the so-called yellow races) almost exactly equaled the white population in 1890 (4,223), but has since declined to a negligible number (655). The 655 in 1930 included 278 Japanese, 164 Filipinos, 136 Negroes, 29 Mexicans, 26 Chinese, 11 Hawaiians, and 11 Koreans. The census does not take into account, of course, the large numbers of people who visit Alaska each year in the summer season, a number conservatively estimated at 35,000 yearly.

The gross area of Alaska is 586,400 square miles, the total population 59,278. It is evident, therefore, that Alaskans have a great deal of room to move about in. About a third of the population is concentrated in the Panhandle, or southeastern Alaska, and four of the seven towns having a population of 1,000 or over in 1930 were located there—Juneau (pop.4,043), Ketchikan (pop.3,796), Petersburg (pop. 1,259), and Sitka (pop.1,056). The total population of southeastern Alaska (First Judicial District) was 19,304 in 1930.

The least populous section is in the Second Judicial District (northwestern Alaska), with only 10,127 persons, or 17 percent of the population of the Territory. Nome (pop.1,213) was the only town of this area that had a population of more than 1,000. The rest lived in small villages, the largest of which had only a few hundred persons.

The Third District, with 16,309 persons, or 27 percent of the Territory's population, had only one town of more than 1,000 population—Anchorage (pop.2,277). The Fourth District, with 13,538 population, had 23 percent of the Territory's total and also only one town of more than 1,000—Fairbanks (pop.2,101).

The population was about evenly divided in 1930 between Natives (29,983 or 50.6 percent of the total) and whites (28,640 or 48.3 percent). There were about 152 males to each 100 females for all classes. This disparity was due to the large proportion of males among the whites —228 males to each 100 females. The Native population was about evenly divided between males (15,359) and females (14,624).

THE WHITES

Alaska is like the rest of the United States in the extent to which its inhabitants owe their vigor to many foreign strains. Of the 28,640 white people in Alaska in 1930, only 10,990 were born in the United States, of American parents. Either the mother or father, or both, of 7,470 were foreign born. 10,180 were themselves born in foreign lands, but 6,359 of these were naturalized citizens, and 1,974 had taken out their first papers. Residents of Alaska who were in 1930 either immigrants or the children of immigrants totaled 17,650. Unlike the great industrial areas of eastern United States, Alaska drew most of its foreign white stock not from central and southern Europe, but from northern countries—Norway, Sweden, Canada, Germany, England, Finland. Other countries contributed negligible amounts to the foreign white stock of Alaska. Over a third of this group (35.4 percent) are Alaskans of long standing, having moved to Alaska in 1900 or before. Approximately another third immigrated in the gold-rush days between 1901 and 1910, and only ten percent between 1911 and 1914, the number diminishing thereafter. The large part that people of northern Europe have had in building Alaska is strikingly illustrated in the number of Norwegians in Ketchikan, Alaska's second largest city (population 3,796). Of the 1,039 foreign-born white residents of Ketchikan in 1930, 550 were born in Norway and 277 more were of Norwegian stock.

About 70 percent of Alaska residents who were United States citizens at birth were born in Alaska. About 0.4 percent were born in other outlying United States possessions. Most of the rest were born in the United States. Of these, 5.2 percent were born in the State of Washington. The rest were natives of California, Minnesota, Oregon, Wisconsin, Illinois, Michigan, New York, Iowa, Pennsylvania, Ohio, and Missouri. Natives of other states were less than one percent for each state represented.

THE NATIVES

The Native Alaskans may be divided roughly into four groups, inhabiting four geographic areas: the Indians of southeastern Alaska, the Indians of the Interior or Athapascans, the Aleuts, and the Eskimos.

The only original tribe of the southeast is the greatest in number—the Tlingit Indians who in 1930 numbered 4,462 and who inhabit all southeastern Alaska except Annette Island and the south end of Prince of Wales Island. Annette Island is the adopted home of Tsimshian Indians from British Columbia who settled the island in 1887, led by the missionary, William Duncan. Only 588 Haida Indians, members of a great tribe of British Columbia, are found in American territory, on the south end of Prince of Wales Island.

The Athapascan (or Tinneh) Indians, numbering 4,935 in 1930, inhabit the south coast and the Interior from Cook Inlet on the west to the Canadian border on the east, and north to the watersheds of the Yukon and the Arctic Ocean.

The Aleuts, related to the Eskimos but distinct from them in language and customs, are grouped for census purposes with the Eskimos and are estimated as about 4,000 in number. They inhabit the

Aleutian Islands, the islands along the Alaska Peninsula, and parts of the Peninsula itself.

The Eskimos number about 15,000 (together with their neighbors the Aleuts, 19,028 in 1930), live along the coast of the Arctic Ocean and Bering Sea, and have penetrated inland by way of the Yukon and Kuskokwim rivers.

There is much interbreeding between whites and Natives, the percentage of mixed blood having increased from 7.2 percent of all Native inhabitants in 1890 to 26.1 percent in 1930. The term "Indian" includes full-blooded Indians and those of mixed Indian and other blood.

The first white men to encounter Native Alaskans were the Russian sailors of Bering's expedition of 1741. News of the wealth of the "Great Land" soon reached the Russians and the desire for furs seized Russian traders like a fever. They pushed from island to island of the Aleutian chain, leaving behind them a bloody trail of murder, rape, and slavery, almost exterminating the Aleuts and breaking the health and spirit of those who survived. With the merging of several fur-trading companies in 1799 into the royal monopoly called the Russian America Company, the Aleuts were forced into semi-slavery as sea-otter hunters—both the hunters and the hunted decreasing rapidly in the process. The Eskimos, engaged largely in hunting fur animals on land, were treated somewhat better by the Russians, who realized that interference with their mode of living would decrease the flow of furs from this roving, freedom-loving people.

The Tlingit Indians, a proud people and excellent warriors, refused to be enslaved and answered attack with attack, defeating the Russians again and again with primitive weapons. The Russians accordingly equipped whole hunting expeditions with Aleuts, sailing with these Native crews as far south as the Santa Barbara Islands off the coast of California and as far west as Japan and Kamchatka.

From 1867 to 1890, under United States control, little was done for the Natives. A reaction toward a humane policy developed about 1884 when the Bureau of Education began its work in Alaska, and such honest and disinterested men as Dr. Sheldon Jackson, who introduced reindeer among the Eskimos and founded Native schools, and William Duncan, who brought the Tsimshians to Metlakatla and established a Native cooperative village, began their energetic and intelligent efforts. Today some one hundred schools are maintained for Natives.

In most areas of Alaska a system of Native schools has been maintained parallel to the schools for white children—Native schools and so-called Territorial or white schools existing side by side.

The Indian Service is increasingly adapting its educational program to the needs of the Natives. Aside from one or two areas where the mixed population is sufficiently large to permit the operation of local high schools, Alaska communities are so small as not to justify an educational program beyond the elementary grades. Several small orphanages at various points in Alaska have been closed, and today two vocational boarding schools constitute the sole public advanced vocational centers. One of these is at Wrangell in southeastern Alaska and the other at Eklutna on Cook Inlet.

The problem of the health of the Natives is even more serious and pressing than that of their education. A study of mortality among the Native races of Alaska appearing in the public health reports of the United States Treasury Department for March 2, 1934 shows that, although the white and Native populations of Alaska are nearly equal, during the period 1926-1930 deaths reported among the Native races were 2,767, among whites, 1,704; the largest death-rate occurring in the age group under 20. Later unpublished statistics emphasize the seriousness of the health situation among the Natives.

The study referred to shows that among the native Indians and Eskimos tuberculosis far exceeded any other cause of death, with a death-rate of 655 per 100,000 for the whole Native population. In the southeastern division, where deaths were more completely reported, the rate was 888 per 100,000. The comparison between this rate and that of whites for the same areas is startling—the white rate for the whole territory was 56 in comparison with the Native rate of 655, and for the southeastern district 42 as compared with the Native rate of 888. There is even a suggestion of an increasing rate, particularly in southeastern Alaska. Tuberculosis caused 35 percent of all deaths among the Natives, a figure that does not vary greatly in the different divisions. Recent statistics compiled by the Territorial auditor show 226 deaths reported from tuberculosis from January, 1936, to January, 1937. This gives a tuberculosis death-rate of 753 per 100,000 among the Natives in 1936, a rate that is more than thirteen times that reported for the registration States for 1934. The eventual establishment of good health conditions among the Natives, however, can come only through the general improvement of their social and economic conditions.

Considered unsentimentally, the Native is a human resource worthy of conservation not only for his own sake, but also for the welfare of the Territory. It is possible that under favorable conditions the Native might flourish and multiply. In such an event, the problem of seasonal industries would be lessened, and at the same time more of the wealth created by these industries would remain in the Territory. The attainment of economic independence by the Natives, and consequent well-being, is conditional upon several factors in relation to which the Federal government must continue to play a most important part, including the solving of problems of health, education, and social welfare, as well as economic aid and guidance.

Because of the restriction of Native activities which accompanied the reservation policy among the Indians of the United States, the Natives of Alaska, with the exception of the transplanted colony of Metlakatla, have steadfastly opposed the development of reservations as racial discrimination. Yet in southeastern Alaska the Metlakatlans with reserved fishing rights are in a superior economic position to similar villages of Haida and Tlingit Indians which are also dependent upon fishing. In the one case, the Natives are protected from white competition; in the others, they must compete. As a result, it is becoming evident to these southeastern Indians that some form of reserved area would be a reliable guarantee of the minimum rights essential to economic self-support.

Much of the area inhabited by the Indians and Eskimos of the Interior and northern Alaska is adaptable primarily to trapping and reindeer herding. It may be found advisable to reserve certain areas for trapping exclusively by Natives similar to the area now surrounding the village of Tetlin. With the complete taking over of the reindeer service by the Office of Indian Affairs and the elimination of white commercial interests, it becomes important for education to make provision for the training of Eskimo herdsmen, for the development of individuals sufficiently familiar with white economic enterprise to make a success of the existing Native stores, and for the necessary adaptation of Native economy to its contact with white economy. Each year a greater number of Eskimo young people are seeking advanced vocational training. The opportunity for such training will probably soon be established in the Eskimo area.

Experimental work in the revival and adaptation of Native handicrafts shows that a substantial market may be developed under careful guidance. The school at Nome has a successful adult skin-sewing project among fifty women, which has increased the popularity of the Eskimo parka and indicates the possibility of developing a favorable market for this garment in other parts of Alaska and in parts of the United States where winter sports have become popular. A revival of fine ivory carving may contribute to the cash income of the Eskimos. In southern Alaska what has been accomplished by a revival and adaptation of wood carving and silver work is prophetic of what may be done with the southeastern Indian crafts. The Indian Office has recently appointed a supervisor of craft work for the entire Territory.

LABOR

The wage-earning class is an unusually large portion of the population of Alaska, where economic circumstances have not favored the development of a large middle group of small proprietors, professional workers, and salaried employees. Alaskans gain their living largely in fishing and canning, mining, fur trapping and breeding, transportation, and farming. Increasing numbers are being drawn into the domestic and personal services which cater to the large tourist trade.

In the Alaska economy, during the short summer period, activities are concentrated on fishing, placer mining, and farming. To this is added the seasonal activity created by the tourist and the sportsman. A large proportion of Alaska people thus find themselves exceedingly busy in the summer and relatively unoccupied the rest of the year, the only exception being the trapping of fur which furnishes employment for about 8,000 people during the winter months.

Many Alaskans are thus confronted with the problem of earning enough in the summer months to suffice for the whole year. This is strikingly illustrated by the most important industry—fishing. Actual salmon fishing lasts only about two months, but the work of preparing for and closing operations gives considerable employment for two months more. Many of the canning companies send their own vessels from Seattle or San Francisco to their canneries loaded with most of the supplies, including food, needed for the workmen and the plant for the entire season. Vessels also convey most of the cannery workers, recruited in the Pacific Coast cities, to the cannery and bring them back at the close of the season. In 1936, 30,383 workers were employed in fishing, and about forty percent of these were imported workers. The number of persons employed in the commercial fisheries of Alaska in 1937 was 30,331. Of these, 17,398 were whites, 6,600 Natives, 3,908 Filipinos, 967 Japanese, 634 Mexicans, 556 Chinese, and 268 miscellaneous.

The importing of labor for the salmon-canning industry has been necessary because of the sparse population in the vicinity of the canneries. Up to a very few years ago it was engaged for the most part in San Francisco. A contracting system was employed, and since preference was given to Mexicans, Filipinos, and Chinese, who were usually unfamiliar with the English language and the meaning of the contracts they signed, such serious abuses arose that the State of California was forced to intervene to protect the interests of these workers. Under the NRA code the contract-labor system was abolished.

From time to time protests are made by Natives against the importation each year of large numbers of Orientals and other workers from the States to the salmon canneries during the operating season. Natives affirm that Alaska Indians are fully qualified to perform the labor required, but that they have been discriminated against in the matter of employment in the canneries. Quite naturally, they feel that as residents of the Territory for many generations they should be given preference over residents of the States who come to Alaska only for the salmon-canning season. As the original inhabitants of the Territory they also believe they have a prior claim on the fish and other natural resources there. The development of industrial processing in Alaska in such a way that local labor would be given employment the year around, instead of only a few months during the active salmon-fishing season, would benefit the Territory as a whole and foster a more rapid increase in the population there.

Mining is second to fishing in the industrial activities of the Territory. A characteristic of mining, especially of placer mining, is that much of it occurs where the soil is so frozen that winter mining is difficult. Means have been found which somewhat minimize this obstacle to year-round operations; but mining still remains highly seasonal in these areas, and miners drift from the placers to the towns to spend the winter in idleness, because there are no opportunities for winter employment. Another characteristic of placer mining is that sooner or later the placer becomes exhausted. As a result, the placer community often ultimately becomes a ghost town. The miner must seek employment at some other unexhausted placer—sometimes at a great distance—or else enter some other form of employment, which is difficult because of the limited opportunities. These conditions tend to make a portion of the mining population quasi-nomadic, without permanent abode. In addition, the demand for metals is tied up so closely with world events and world prices that the operation of the mines tends to be irregular. As the mines are often located in more or less isolated communities, the workers are peculiarly dependent on a particular mine for employment. These circumstances again militate against the establishment of permanent communities with well-developed social activities.

The seasonal factors affecting Alaska's two most important industries definitely stand in the way of an increased permanent population. They are likewise the cause of considerable wages and profits leaving the Territory, to be spent on goods or improvements in communities "Outside." They explain the constant drain from the Territory of capital and of people who might otherwise become permanent citizens. Such conditions tend to perpetuate the attitude that Alaska is a land for exploitation only.

The wood-pulp industry envisioned for southeastern Alaska holds the prospect of a year-round industry employing a quota of permanent employees, while affording off-season employment to some now engaged in the fisheries.

Information on wage levels is very limited, but does not indicate that money earnings are out of line with those received in the States. Still less information is to be had regarding "real" wages, as there are no available data, as to prices and cost of living, sufficiently comprehensive to justify authoritative conclusions.

Violent labor struggles occurred in the early twentieth century in connection with railroad construction and mining. Today labor organization is quite general. The Alaska Fishermen's Union is well established, as are units of the International Seaman's Union and certain groups of railroad employees and Federal employees. Unionization is less general in the mining industry. Of recent years, organization has extended to the canning industry in certain sections by the United Cannery, Agricultural, and Packinghouse Workers, affiliated with the Congress of Industrial Organizations. A central labor council in Cordova, chartered by the American Federation of Labor in April, 1937, includes locals of the International Longshoremen's Association and of the Hotel and Restaurant Employees' International Alliance, as well as two directly affiliated American Federation of Labor unions (canning workers and clam diggers) and a local union of transport workers. Among the building trades, Alaska is included within the field of activity of at least one international union—the United Brotherhood of Carpenters and Joiners. The weekly *Alaska Labor Dispatch* is published in Juneau.

The Territory has a long record in the field of labor legislation. It was the first jurisdiction in the United States to provide for old-age pensions (1915); it was among the very first to enact a workmen's accident and compensation law (1915) and to establish a maximum eight-hour workday for underground miners and associated employments (1913). In 1913 it established the office of Territorial Mine Inspector, and in 1917 a code of mining regulations which provided, among other things, for the protection of dangerous machines and equipment and the reporting of accidents, and prohibited the underground employment of boys under 16. In 1919 a code of sanitary and safety regulations was made for factories, canneries, and other establishments, covering cleanliness, drinking water, toilet facilities, and temperature. Other Territorial labor laws have established an eight-hour day on public works (1913); sought to protect employees against exploitation by company stores and boarding houses (1913); prohibited the bringing in of workers under false representations (1913); provided for a system of arbitration in labor disputes (1913); prohibited the payment of wages in non-negotiable paper, and required the payment of wages at least monthly and within fifteen days after the end of the month (1923); placed a fee of $500 per year on private employment agencies (1919); and required the payment of prevailing wages on public works (1931).

In addition to the above laws, which were enacted through local initiative, the Territorial Legislature has been prompt in accepting the provisions of recent Federal legislation which required approval of the Territory in order to be effective within its jurisdiction. Thus in 1937 Alaska, in conformity with the Social Security Act, enacted laws establishing an unemployment-insurance system and a system of maternity and child welfare, as well as accepting the provisions of the Social Security Act relating to the public health. At the same time, it accepted the provisions of the Wagner-Peyser Act regarding public employment offices, and established a Department of Public Welfare for the Territory.

The Native population presents certain special labor problems. In part, the Natives still follow the rather primitive occupations of hunting and fishing and to that extent are self-sufficient in their economy. Considerable numbers of Natives, however, have identified themselves with more or less settled industry so far as to become part of the labor market, and this proportion will no doubt increase in the future. The Natives have amply demonstrated their ability to participate in the major industrial activities of the Territory. In 1936, 6,958 Natives found employment in the fisheries industries. Metlakatla and Klawak have for many years operated Native-owned canneries.

Under the Indian Reorganization Act, the Office of Indian Affairs has under consideration a number of reserves calculated to stabilize the Native economy, and recommending to the secretary of the interior that large areas of water, as well as land, be set apart for the Indians as fisheries reserves, and that loans be made to them for salmon canneries within these reserves. This has particular reference to southeastern Alaska and Cook Inlet, and may be extended to western and northwestern Alaska. If these plans work out successfully, the economic condition of the Alaska Natives should be greatly improved, and the Federal government should be released from the expenditure of large sums of money to relieve destitution among the Natives.

Substantial numbers of Natives are engaged in the various mining and logging operations, and a considerable part of the annual Alaska fur catch comes from trap lines operated by them. The Eskimos have shown their ability in the reindeer industry, and under the Reindeer Act of 1937 the sum of $2,000,000 was authorized for appropriations to return the reindeer to the Natives. As yet, however, no appropriation has been made for the purchase. Other industrial, commercial, and even professional enterprises have representatives from the Native groups. The solution of the problem of manning Alaska industries with permanent residents would greatly help in the economic rehabilitation of the Native population.

4. GOVERNMENT

ALTHOUGH ALASKA was created a Territory by the Organic Act of 1912, fifty-two Federal agencies still have direct jurisdiction in Alaska affairs. The social welfare of Alaskans, the administration of justice, public order, public health, care of the insane, medical and educational programs for the Natives, standards of employment and conditions of labor—all these basic duties of government remain primarily the concern of Federal agencies centered in Washington, D.C. The administration of the natural resources—minerals, forests, public lands, aquatic resources, wild life—have been kept Federal prerogatives. The control of these basic resources gives the Federal government almost unlimited authority over the population and places a great responsibility upon it for the welfare of the citizens of the Territory.

This control of Alaska extends to the officials who govern it internally. Both the governor and the secretary of Alaska are appointed by the President of the United States, with the advice and consent of the Senate, for four-year terms. The President also appoints four district judges, four district attorneys, and four United States marshals, one for each judicial division, for four-year terms each. The governor appoints a Board of Education for four years and a commissioner of health for two years. Only members of the Territorial Legislature and the attorney general, treasurer, and auditor may be elected by the voters of Alaska: senators for four years, representatives for two, and the attorney general, treasurer, and auditor for four each.

The Legislature consists of a Senate of eight members, two from each judicial division, and a House of Representatives of sixteen members, four from each judicial division. The Legislature convenes at the capitol at Juneau on the first Monday in January in odd-numbered years for a sixty-day session. Special sessions of not over fifteen days may be called by the governor.

Alaska is represented in the House of Representatives of the United States by a delegate, elected for a term of two years. He has no vote in the House.

Frequently, the only regular arm of government in remote settlements is the United States commissioner, appointed by the district judge. He is justice of the peace, probate judge, coroner, town clerk, recorder, jailer, and guardian of minors and the insane. He holds court and tries misdemeanor cases and all civil cases where the amount involved is not more than one thousand dollars. Though his formal education may be sketchy, and his knowledge of the law slight (commissioners have been known to issue a divorce by the simple expedient of tearing up the marriage license and refunding the license fee), he is usually a shrewd dispenser of justice.

Communities having 400 inhabitants may incorporate as a first-class city; communities with 50, as a second-class city.

While Federal law charges the governor of Alaska with "the interests of the United States within the Territory," he has little control over most of the Federal activities, because in the main Federal agencies operating there take their direction from the parent organization. Except for the Alaska Road Commission, none of the bureaus of the Department of the Interior, other than the governor's own office, is subject to his jurisdiction. On the other hand, while the governor is granted wide powers under Territorial acts, these are so frequently shared with other locally chosen Territorial officials that the governor cannot be validly held responsible for administering tasks created by Territorial authority. Although an appointed and not an elected official, he is yet given a veto by Congress over Territorial legislation (even including items of appropriation bills) unless overridden by a two-thirds vote of the Territorial Legislature.

The cry of "home rule" has been heard from residents of Alaska for a number of years. Exponents of statehood for Alaska point to its history for proof that a wide extension of democratic processes is possible in the Territory. They characterize the administration of Alaska by the War Department immediately after its purchase as "tyrannical and cruel," and of the succeeding administration by the Treasury Department as "weak and effeminate." Only after attempts of the Federal government to govern Alaska had been virtually abandoned, claim the exponents of home rule, and miners began to organize miners' meetings and passed local laws of self-government, did Alaska have, "for the first time since the American occupation, a government that gave real protection to anyone." Upon the organization of the District of Alaska, however, these local governments were abrogated, and a governor appointed by the President who, according to the exponents of home rule, had no duties except "to draw his salary, present his annual report, and write a Thanksgiving-Day proclamation." Finally, those who urge statehood point to the fact that in 1912, when the District of Alaska was terminated and the Territory of Alaska was created, the new Territory had a population greater than that of nine states already admitted to the Union.

Such, sketchily presented, are the arguments for a form of government for Alaska "conforming to American tradition and American ideals." Unfortunately for these brave words, advocates of statehood seem to link their proposal with a demand that the natural resources of the Territory be permitted to pass into the hands of private owners. It is quite true that reckless private exploitation of natural resources has been part of the "American tradition"; it is just as true that this policy, if not finally checked by the relatively recent one of conservation of natural resources, would have ruined our West. With all the resulting administrative faults, the participation of Federal agencies in Alaska affairs insures the people of both Alaska and the United States the continuation of a wise policy of conservation.

Alaska seems destined to remain in Territorial status for some time. Governor Troy has repeatedly recommended, however, the establishment of a full Territorial form of government. Such a government would have the right to determine its own structural organization, including its central administrative plan.

5. NATURAL WEALTH

Fish and Aquatic Animals—Minerals—Fur—Reindeer—Agriculture—Forests.

ALASKA is enormously wealthy in natural resources—fish and aquatic animals, minerals, forests, waters, farming and grazing lands, and wild life. But natural resources are exhaustible, and the dangers of the reckless exploitation of Alaska's natural wealth since its purchase in 1867 began to be realized in the early years of the present century. Coal lands were withdrawn from private entry in 1906, oil lands in 1910, and the Tongass and Chugach National forests were created in 1909. At the same time a number of acts of Congress were passed to regulate the fishing industry. Since that time the natural resources, Federally owned, have also been Federally controlled and regulated under a policy of conservation, hotly disputed at the time it was initiated, but today generally accepted. Leasing for development purposes has superseded the older policy of outright sale. Lands for homesteads, industrial sites, and certain other forms of occupancy, and for mining purposes exclusive of coal or oil can be patented under appropriate laws.

FISH AND AQUATIC ANIMALS

The exploitation of the Alaska fishery resources may be said to have begun in 1878, eleven years after the purchase of the Territory from Russia, when the salmon-canning industry was established. Previously there had been some salting of salmon and cod by Americans and Russians. Salmon, herring, halibut, whitefish, cod, and many other fish formed one of the most important food supplies for the Natives from prehistoric times. Previous to the spectacular development of the salmon-canning industry, however, the inroads made on this natural resource must have been inconsequential. Thus the fisheries of the Territory were in practically a virgin state when Alaska was acquired.

The fur-bearing aquatic mammals had been ruthlessly exploited during the period of Russian occupancy and under private American lease, until 1912, when they came under Federal control.

The American whaling fleet moved north into Alaska waters about 1840. Its operations, chiefly in Bering Sea and the Arctic Ocean, were intensive but short-lived. The discovery of petroleum in the United States and the substitution of steel for whalebone by 1871 made whaling in distant waters unprofitable. The industry declined in importance before there was any apparent diminution of whales in Alaska waters.

Today the Alaska fisheries are extremely productive. The fur-seal herd is likewise in a satisfactory condition. Although all killing of sea otters has been prohibited in Territorial waters and on the adjacent high seas since 1911, this species is still very rare along much of the coastline it formerly inhabited. Whaling has been carried on in a very limited way with modern methods for many years. This activity apparently has not materially reduced their number, and the protection now given by international agreement assures their perpetuation. The protection now afforded other aquatic mammals also, if continued, will prevent their destruction.

SALMON. In the early years of salmon canning the catch for commercial use was small, and the runs were able to withstand the drain without evident depletion, in spite of stream barricades and other improper and destructive fishing devices. The Congress of 1888-9 recognized the potential danger of exhausting the salmon runs and passed legislation limiting the methods of fishing in the Territory. Subsequent investigations revealed the complexity of the life histories of the various species of salmon and more than ever emphasized the necessity for legislative protection. A new Alaska fishery law was enacted on June 26, 1906, giving greater protection to salmon and other food fish. During the rapid growth of the salmon-canning industry from 1914-18, when war conditions demanded a maximum production of all foodstuffs, the Bureau of Fisheries enforced the inadequate fisheries laws of Alaska with limited personnel and facilities for inspection. Fish-cultural work had been undertaken to relieve the strain placed on the salmon runs by the commercial fishery, but the propagation of salmon could not keep pace with the growth of the industry. It was in this era of rapid expansion that the interest of salmon packers centered upon the great runs of pink salmon in the sheltered waters of southeastern Alaska. From 1910-18 the pack of canned salmon there increased more than 200 percent, and fear was expressed for the future of the industry. The catch greatly decreased after 1918. Diminished catches and inadequate escapements of salmon to the spawning grounds were accompanied by more intensified operations. Such obvious steady destruction of the Territory's most valuable natural resource could not be retarded under the fishery laws then in force. There was also a real scarcity of salmon in other parts of the Territory at the time, similarly attributed to overfishing. Most of the packers, however, held, in the face of these facts, that the exhaustion of the salmon fisheries was an impossibility and vigorously opposed all efforts to curtail the fishery.

In 1921 it began to be realized that the condition of the salmon fisheries of Alaska was precarious. Overfishing for many years had caused serious depletion. In 1922, as a temporary expedient, the President established by executive order certain fishery reservations and placed them under the administrative control of the secretary of commerce, acting through the commissioner of fisheries. The first real authority for the regulation of the Alaska fisheries was conferred upon the secretary of commerce by the White law of June 6, 1924. Enactment of this law, which virtually gives the secretary authority to say when, where, and how fishing may be conducted in the Territory, marked a turning point in the administration of the fisheries. From a state of declining abundance, the situation with respect to the salmon fisheries has been reversed, and after a period of gradual upbuilding this resource is now almost complete in its restoration.

Throughout the administration of the Alaska fisheries, there has been a continuous conflict between the operators of mobile forms of fishing gear and those who use stationary apparatus. For a number of years an effort has been made to secure passage of legislation which would prohibit the construction and operation of all traps, weirs or pound nets, except herring pounds, limit the size of purse-seine boats in the salmon fishery, and restrict the length and depth of purse seines used in Alaska waters. This proposed legislation also would limit, and eventually entirely prohibit, seine fishing for salmon except by residents. Unfavorable reports have been submitted by the Department of Commerce on such proposed legislation, because such measures are not necessary to conserve the fisheries. Many believe that in some parts of Alaska traps are a suitable and economical method of capturing salmon, but are not proper in places where natural conditions are unfavorable.

Beginning in 1930, and in every year since then, a number of Japanese floating canneries have been operated on the high seas off the Bering Sea coast of Alaska, and particularly in Bristol Bay. These cannery vessels range in size from 3,000 to 8,000 tons, and the fishing vessels vary from small motor boats to Diesel-powered trawlers of 400 tons. The announcement by the Japanese government in 1936 that extensive studies would be made of the routes of migration and the availability of salmon on the high seas of Bristol Bay alarmed the American salmon packers, who have more than $20,000,000 invested in canning plants and equipment in that area.

The predominance of salmon in the Alaska fisheries is shown by the fact that salmon products alone were valued at $916,262,896, from 1880 to 1935, representing about 89 percent of the total fisheries output. Although fair quantities of salmon are sold fresh, frozen, and pickled, by far the largest part of the catch is used by the canning industry. From a small beginning in 1878, when two plants put up 8,159 cases of canned salmon, the industry increased until a maximum of 156 canneries were operated in 1929 and packed 5,370,159 cases, containing 48 one-pound cans to the case, or the equivalent thereof. The pack in 1929 was slightly larger than the average annual pack for the previous five-year period. The all-time record output was in 1936, when 8,437,603 cases were produced. The number of canneries operated in that year was 117, thus indicating a tendency toward more economical and efficient operation through consolidation of effort. About 6,670,000 cases were packed in 1937, valued at over $44,000,000. Although a few hand canneries are still engaged in the business, most plants are equipped throughout with modern machinery capable of large-scale production.

Cod. The history of the Pacific cod fishery records the struggle of a few individuals and companies against the long-established Atlantic Coast fishery which, backed by wealth and a vast supply of raw product, has long commanded the American market. In the North Pacific the primary question has been finding a market for the catch; a greater catch could be made if a market were available for it.

The first vessel to visit waters off the Alaska coast for cod was the schooner *Alert,* from San Francisco, in 1864; and in 1882 the regular Bering Sea cod fishery was started. In nearly every year since, schooners have operated on the Bering Sea banks, and for a number of years shore stations also were operated for winter fishery, chiefly along the south coast of the Alaska Peninsula and in the adjacent islands. At present the operations from shore are on a very small scale, by fishermen working either individually or in partnership, chiefly in the Shumagin Islands region. The cod fishery has been carried on largely from vessels operating on the high seas of Bering Sea. The catches are salted and stowed in the hold, and when a full cargo is obtained the vessel returns to its home port in the States. Usually only one trip is made to the banks in a year. About $32,000 worth of cod was taken in 1937.

There appears to have been no decline in this species in territorial or offshore waters of Alaska. Fear has been expressed by cod fishermen in recent years, however, that extensive trawling operations by Japanese vessels in Bering Sea might seriously impair the productivity of certain offshore banks.

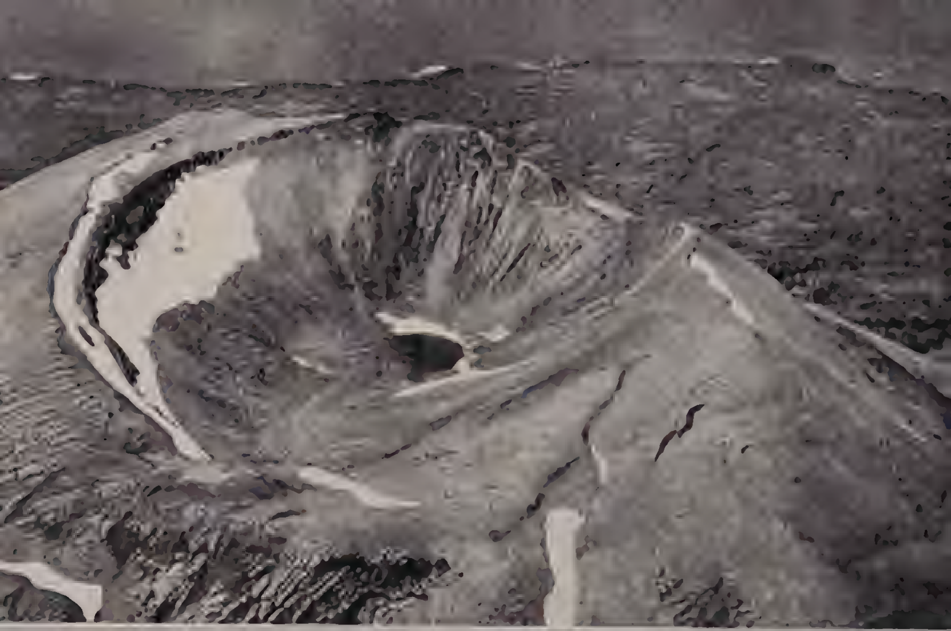
Herring. The first commercial use to which herring was put in Alaska was for oil and fertilizer. A plant was established on the site of an old whaling station at Killisnoo, on upper Chatham Strait, in 1882. This was the only herring reduction plant in Alaska until 1919, but expansion was rapid after that year. Although a few barrels of herring were salted in various localities prior to 1900, the pickled-herring industry may be said to have begun about that time at Peters-

The Great Land

IT IS A COMMON American belief that Alaska is largely covered with ice and inhabited by Eskimos who live in ice houses and drink blubber. Alaska, the Great Land of the Aleuts, the Brobdingnag of Gulliver, does contain a great deal of ice—in its warmer regions. The glacier system of the Mt. St. Elias range is the largest ice field in the world outside the Polar caps. But this country also contains the longest chain of volcanoes in the world and the highest mountain in the world, measured from base to peak, and most of Alaska lies north of the glacier ice. Flowers and berries grow profusely in this country. Delphiniums are nine feet high, strawberries are two inches in diameter, and cabbages weigh fifty pounds. In Alaska the waters are more valuable than the land. Alaska streams are the spawning ground of the Pacific salmon, Alaska seas contain furs and foodstuffs, shrimp and whales. Lemuel Gulliver quite lost his perspective here, and it is not surprising that average American citizens have mistaken notions about the Territory.

ABOVE: *Forest Floor, Sitka*
BELOW: *"Alaska Cotton"*

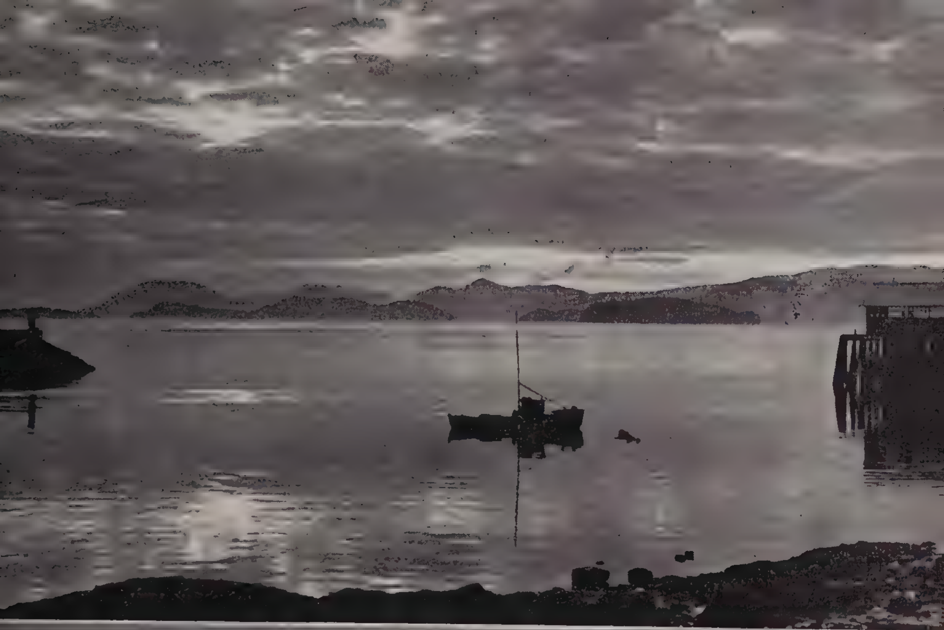
ABOVE: *Delphiniums Grow High*
BELOW: *Near the Alaska Railroad*

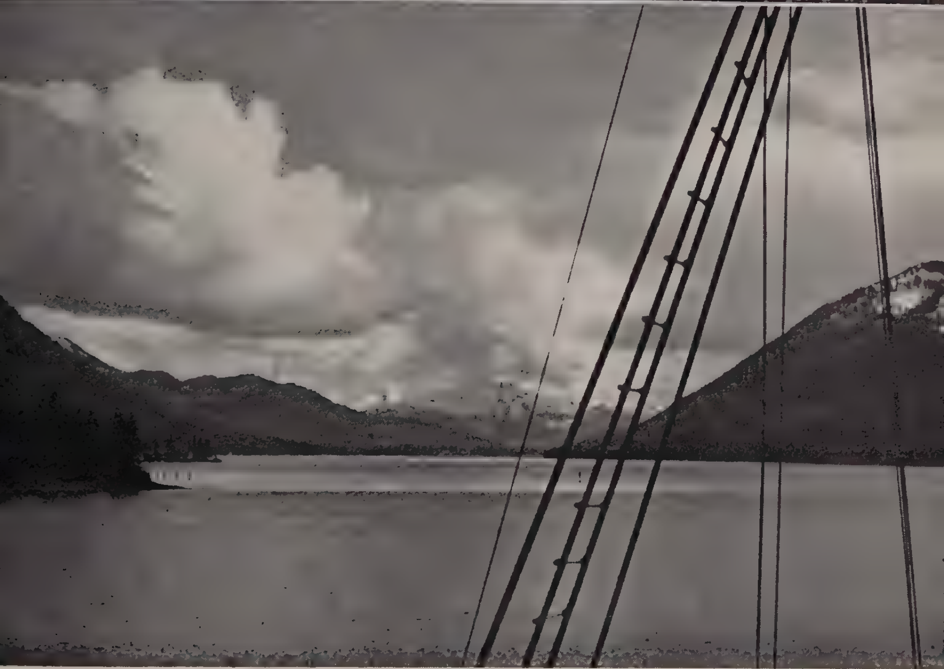


ABOVE: *Crater of Mt. Edgecumbe*
BELOW: *Tongass Forest in Winter*

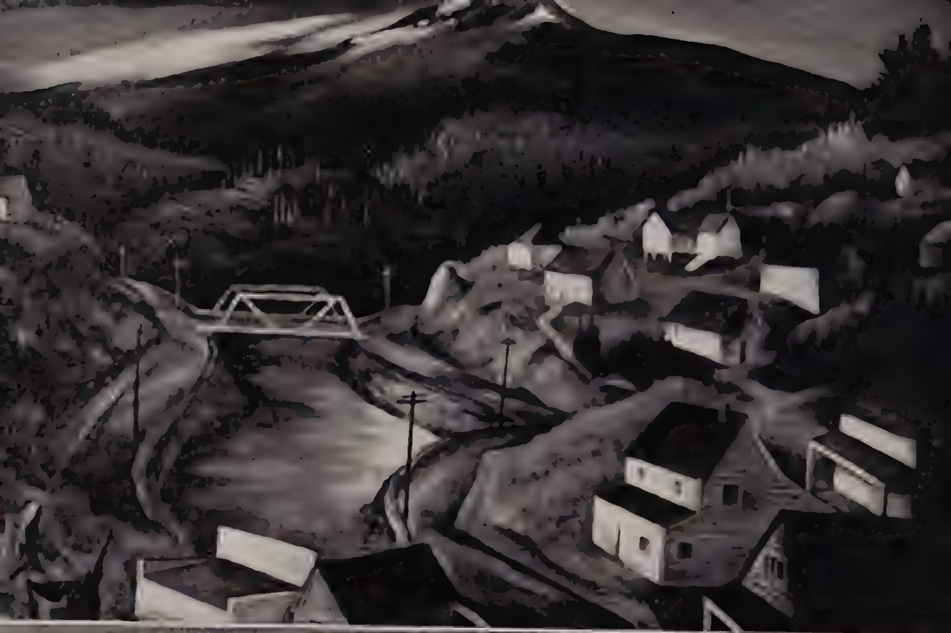
ABOVE: *Taku Glacier*
BELOW: *Dawes Glacier*

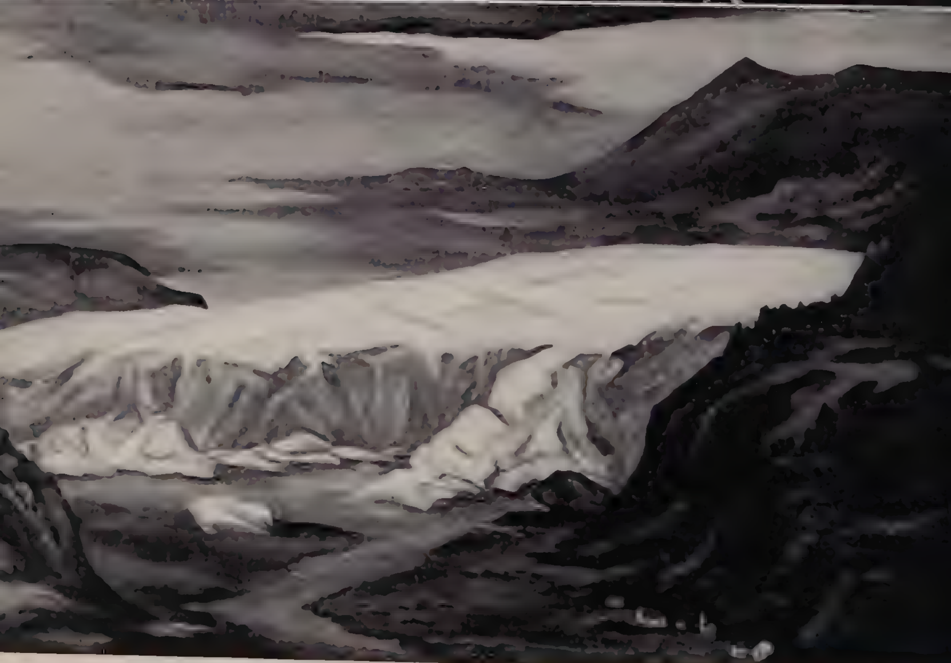
Alaska Flowers





ABOVE: *Sunset View from Wrangell*
BELOW: *Entrance to Sitka Harbor*





ABOVE: *"Spawning Creek" by F. Lo Pinto*
BELOW: *"Glacier" by F. Lo Pinto*

ABOVE: *Polk Inlet*
BELOW: *Mt. McKinley*

ABOVE: *Farming Near Fairbanks*
BELOW: *Auk Lake and Mendenhall Glacier*

ABOVE: *Federal School, Sitka*
BELOW: *Sea Gulls*

burg. Operations were on a small scale until 1917, when the Bureau of Fisheries introduced into Alaska the Scotch method of curing herring. The resulting attractive pack, together with war prices, stimulated the industry. The catch of herring, which had never reached 40,000,000 pounds before 1918, amounted to 180,000,000 pounds by 1925. During 1937, twenty herring plants were operated, producing products valued at about $2,891,000.

HALIBUT. There are records of halibut fishing in Alaska waters as early as 1879, by schooners operating from San Francisco. There was also some salting of halibut in the Territory in 1889, but this business did not attain importance until 1899. The first exploitation in Alaska was carried on by small schooners whose catches were shipped south on the regular freight steamers. The gold rush of 1898 provided this essential transportation link for the development of the fishery.

With transportation to market assured, halibut fishing expanded, but at first it was confined to the inshore grounds, which were quite limited in extent. The local Alaska fleet was supplemented by the Puget Sound vessels seeking protected waters in which to operate during the winter months. A decreasing supply on the inshore banks and better mechanical equipment in the fishing fleet, together with improvement in the means of preservation, turned attention to deep-sea fishery, and an abundance of halibut was found on the banks from Forrester Island northward to the Gulf of Alaska. This fishery, unrestricted, grew until depletion forced international cooperation to protect it.

A convention between the United States and Canada became effective in 1924 and provided for a closed period of three months each year during which all halibut fishing should be prohibited. It also provided for an International Fisheries Commission, which was to make recommendations on the need for modification of the closed period, to study thoroughly the life history of the Pacific halibut, and make recommendations for the regulation of the fishery. This treaty has served as a precedent for international cooperative control of sea fisheries where such is necessary. Success has been achieved under this and two subsequent conventions, and restoration of the halibut fishery of the North Pacific now seems assured. The Alaska fleet landed in 1937 about 13,282,000 pounds of halibut valued at $931,629, and halibut livers valued at $73,000.

Clams, Crabs, and Shrimps. The clam industry, primarily in central Alaska, and the shrimp industry, in southeastern Alaska, have been upon a well-established basis since about 1914, and there has been a marked development in the packing of crabs in both areas since 1931. In contrast with salmon operations, these industries are largely non-seasonal and are therefore of special importance to the residents of the Territory.

Miscellaneous Fisheries. Trout, sablefish, rockfish, flounder, and ling cod are used commercially in limited quantities. They do not support an independent industry but are handled incidentally in connection with other branches of the fisheries. Some are used more or less extensively in the feeding of foxes and other animals on fur farms.

Besides their outstanding importance commercially, the fisheries of Alaska have a prominent place in the domestic economy—a considerable amount is taken for local use, the quantity and value of which cannot easily be determined. Not only salmon, but whitefish, and other species that have had little or no place in the commercial industry are used extensively, so that the fisheries today, as in primitive times, are one of the primary, direct means of livelihood for many inhabitants of this sparsely settled region.

Whales. Until after the turn of the nineteenth century, whaling off the Alaska coast, other than that participated in to a very limited extent by the Natives, was carried on chiefly by a San Francisco fleet. Of the production by Natives, only the whalebone and a small amount of oil entered into commerce. The first whaling station in Alaska to make use of all parts of the whale carcass was at Tyee in 1908. Products of the shore stations since then have included fertilizer, as well as oil. Although whaling stations have been established from time to time at several places in Alaska, including small and short-lived operations on Cook Inlet and at Nome for beluga or white whales exclusively, there have never been more than four operated in any one year, and usually not more than two. Since 1922 no operations have been carried on in southeastern Alaska. The industry is now confined to the central and western districts: one station is operated at Port Hobron in the Kodiak area, and one at Akutan in the eastern Aleutians.

Prior to 1936, whaling in Alaska waters was unrestricted. On May 1, 1936, an act was passed to give effect to the convention concluded at Geneva on September 24, 1931, and subsequently ratified by the

United States and twenty-five other countries for the regulation of whaling.

Fur Seals. By the international agreement of July 7, 1911, the taking of fur seals in the North Pacific Ocean and Bering Sea is prohibited, except under certain limited conditions by aborigines dwelling along the coast of North America; and the killing of seals on the Pribilof Islands, the chief place where they come ashore, is done by the United States government through the Bureau of Fisheries.

As a result of curtailment of pelagic sealing, or the taking of seals at sea, and scientific management at the islands whereby surplus males of a certain age group are selected for killing, the fur-seal herd has been built up from approximately 130,000 animals in 1910 to over 1,800,000 in 1937. During this period, upwards of 750,000 fur-seal skins have been taken at the islands, of which 15 percent, either in skins or in proceeds of sale, have been delivered to Great Britain (the Dominion of Canada), and a like amount to Japan, as their shares under treaty provisions.

Before sale, the government-owned sealskins from the Pribilof Islands are dressed, dyed, machined, and finished, so that when they pass into the hands of the public they are ready for making into garments. This work is done under contract by the Fouke Fur Company at St. Louis, Missouri. Public auction sales are held by the company twice a year for the account of the government.

The care of herds of blue foxes on St. Paul and St. George islands during the winter months, when sealing activities are practically at a standstill, provides seasonal employment for the Natives. Approximately 1,000 fox pelts are obtained each winter. These are sold at public auction, together with the dressed, dyed, and finished sealskins, by Department of Commerce agents at St. Louis, Missouri.

The net revenue derived from the management of the Pribilof Islands fur-seal industry in the twenty fiscal years from 1918 to 1937 was $2,209,290.24.

Protection of the Alaska fur-seal herd is effected chiefly by vessels of the United States Coast Guard. This includes periods while the herd is migrating between the latitude of southern California and Bering Sea, and also while it is at the Pribilof Islands. Vessels of the Bureau of Fisheries also assist by patrolling the waters off Neah Bay, on the Washington coast, and in the vicinity of Sitka, Alaska.

Sea Otters. The killing of any sea otter on the American side of the North Pacific, both in territorial and extra-territorial waters, is prohibited.

The principal sea-otter rookeries are located in the western Aleutian Islands. Recent surveys of these waters by the Bureau of Fisheries in cooperation with other government agencies having vessels in that region (including the Navy Department, Coast and Geodetic Survey, Coast Guard, and Bureau of Biological Survey) indicate that sea otters have begun to reestablish themselves at the more favorable rookeries. Studies are being made jointly by the Bureau of Biological Survey and the Bureau of Fisheries regarding the natural history and requirements of this valuable animal. A permanent station has been established in the Aleutian Islands where fair-sized, sea-otter colonies exist.

Patrol for the protection of sea otters is chiefly by the Coast Guard, which has general authority to enforce Federal laws on the high seas and navigable waters of the United States. The presence of other government vessels in the vicinity of sea-otter rookeries acts as an effective deterrent to poachers. The slowness of the rehabilitation of sea-otter herds in Alaska under complete protection by law and regulation is evidence of poaching and of a real need for more adequate patrol.

Walruses and Sea Lions. The killing of all walruses in the Territory, except by Natives for food or clothing, by miners and explorers in need of food, or for scientific specimens to be taken under permit issued by the secretary of commerce is prohibited. Sea lions are similarly protected.

MINERALS

Prior to 1898 the annual mineral output of Alaska ranged from negligible amounts to approximately $3,000,000. After the discovery of gold in the Canadian Klondike and the entrance of a swarm of prospectors and miners into Alaska, production quickly increased, totaling about $20,000,000 per year in the period from 1906 to 1914. It then jumped to an all-time peak in 1916 of $48,000,000, because of large new copper enterprises and wartime prices for that metal. After the war the output suffered, ranging between $10,000,000 and $16,000,000, until the advance in the price of gold in 1933. In 1935, it was $18,000,000; in 1936, over $23,000,000; and in 1937, almost $27,000,000.

To the end of 1937 minerals to the value of about $750,000,000 had been taken from Alaska mines. About 65 percent of this total came from gold lodes and 30 percent from copper lodes. Silver, platinum, lead, tin, coal, oil, marble, and other mineral commodities to the value of more than $23,000,000 have contributed to this total.

How great a wealth in minerals remains in the ground? Concerning placer gold reserves, Dr. Philip Smith of the Geological Survey has stated, "That the reserves are large cannot be doubted; that, judging from the facts in hand, they may be $500,000,000 or twice as great as the amount of placer gold already recovered, seems reasonable; that new large-scale developments may demonstrate reserves of even more than double the past production is regarded as not at all improbable." Estimates of the reserves of lode gold are more indeterminate than those for placer gold, but it is the consensus of opinion that the reserves of gold in the lodes may far exceed those in the placers. The facts in hand are still too meager to justify even wild guesses as to the value of the other mineral resources of the Territory. Many of these have already been found in commercial quantities at widely separated points and have contributed notable amounts to its output of mineral products.

Some commodities, such as building stone, gravel and road ballast, limestone, and clays, which have low unit value in proportion to their weight, already have been developed commercially. Were it not for cost of production and marketing, these and many of the now known, but undeveloped, deposits might supply limitless quantities. Ultimately these almost inexhaustible materials may become even more valuable than all of the other mineral products.

Less than half of Alaska has been surveyed topographically or geologically, even on reconnaissance standards, so that for an area of about 300,000 square miles there is no dependable information available as to what geologic conditions prevail or what mineral deposits may occur. Perhaps two-thirds of this unsurveyed area is regarded as likely to contain valuable mineral deposits.

The whole theory of mineral development in the United States in the past has been to encourage the private citizen or organization to discover and utilize the valuable deposits that may be contained in the national domain, and to facilitate the passing of these deposits into private ownership. Criticisms of this policy have been made from time to time, and the adoption of the system of leasing oil and gas lands has in part met some of these objections. Other persons have maintained that more encouragement should be given to miners and prospectors in Alaska than to those in the United States, and have urged that subsidies to prospectors and large credits for the purchase of mining machinery be made available by the Federal government.

By far the larger part of the investigations that have been made of the mineral resources of Alaska are those carried on by the Geological Survey. This work, started in 1895, has been continued uninterrupted to the present. These studies embrace all phases of investigation that are contributory to the finding of mineral deposits, description of their geographic and geologic characteristics, and current records of production and of mineral development. In the course of this work hundreds of reports have been issued which have covered in more or less detail all of the principal known mineral deposits in the Territory.

It is difficult to overestimate the importance of the mineral industry to the general welfare and development of the Territory. According to the census of 1930, about 4,800 persons were gainfully employed in the Alaska mines. Probably as many more persons are concerned with mines and prospects in which they hold interests, and an even greater number make their living by furnishing supplies or equipment for the mines or prospectors.

GOLD. The gold production of Alaska in 1937 amounted to about $20,373,000.

Gold is obtained in Alaska in two ways: by gold-lode mining in which a vein of gold in rock is followed through the ground and the ore crushed into concentrate that is shipped "Outside" for refining; and by placer mining, in which the gold is washed out of gravel. The lodes are the mineralized mines or masses of ore in the country rock and represent material in place. The placers are deposits of sand and gravel that have been worn from hard rocks in the vicinity, and in which the loose grains of gold or other valuable minerals have been more or less concentrated by surficial geologic processes.

Gold was first discovered in Alaska by Peter Doroshin, a mining engineer of the Russian America Company, in the Kenai River basin in 1850. Doroshin's attempt to mine gold in commercial quantities was unsuccessful, and the Russian government discouraged further attempts. In the late 1860's, gold was discovered on Shuck River, at Windham Bay in southeastern Alaska, but was not systematically mined until 1880.

During the late 1870's and early 1880's, a gold stampede began up the Stikine River and into the Cassia District in British Columbia, with the town of Wrangell as its center. Wrangell was thus the first town in Alaska to feel the stimulus of a gold rush. Productive gold mining had been carried on in Silver Bow basin near Juneau from the year 1880, but the Klondike rush was responsible for greatly increased activity in Juneau. In 1896-7 Skagway, gateway to the Klondike, came into being overnight, and the following year had 15,000 inhabitants.

These stampedes were, of course, on Canadian territory, although the stampeders were largely American. The first stampede in Alaska itself was along Anvil Creek, near Nome, in the summer of 1898. In 1899 pioneer miners began to extract gold from the sand and gravel of Nome beach, and the following year saw the great gold rush of 1900. Gold was discovered near Fairbanks, in 1902, and thousands of prospectors rushed in from the Klondike, from Nome and up the old trail that later became the Richardson Highway. Placer gold was discovered near Hot Springs on the Tanana River in 1906, at Iditarod in 1908, at Ruby in 1907-10, and at Tolovana in 1914.

From the beginning of the gold-rush days of 1898 for a period of twenty years, the placer production of gold in Alaska far exceeded the lode production. Since 1919 the output from the two sources has maintained a fairly constant ratio of about 60 percent placer and 40 percent lode. The placer-mining operations are very widely distributed over the Territory, with the exception of southeastern Alaska, where the placers are of relatively small extent. Lode gold is recovered from widely distributed mines, but the present supply comes chiefly from three regions: southeastern Alaska, Willow Creek district in the vicinity of Anchorage, and the Fairbanks district. Southeastern Alaska accounts for about 75 percent of the total lode output.

The first miners used the placer method, separating the gold from the sand and gravel with the gold pan, the rocker or cradle, or the long tom. With these a miner could wash the gold from at most two cubic yards of gravel a day. But soon, in order to work the ground profitably more yards a day had to be treated, and the sluice box was used. The gravel was shoveled into the string of boxes through which streams of water were diverted; and in the bottom of the boxes were cleats to catch and hold the heavier gold. By this method a miner could wash from eight to twelve cubic yards a day.

Much of the gold was buried in perpetually frozen ground, however, and the ground had to be thawed to work it. Steam engines were installed to do this, and the streams were diverted to wash out the gold. Or, when there were extensive deposits, ample water, and a favorable grade, the ground was lifted by the force of water into flumes, where the gold was recovered. It was later found that frozen ground could be satisfactorily thawed with cold water.

Today, placer mining is a highly mechanized industry, and the individual placer miner with his pan or rocker has almost receded into legend. Before a placer mine is installed, the ground is prospected and drilled, and the number of cubic yards, with their gold content per yard, is carefully computed in order to determine accurately whether the ground may be profitably worked, and even what the profit will be. The trees or moss are first stripped from the ground, water flumes installed, and the surface dirt washed off with large hoses. The frozen gravel is then thawed by driving pierced pipes deep into the ground and forcing cold water through them, after which huge dredging machines wash and recover the gold from about 9,000 cubic yards of gravel each per day.

SILVER. The total silver output of the Territory in 1937 was valued at $384,000.

By far the greater part of the silver produced in Alaska occurs as a relatively minor constituent in ores whose principal value lies in some other metal. Nearly 70 percent of the silver extracted in the past has been derived from ores chiefly valuable for their copper content. All of the gold-lode mines yield some silver. Although silver-lead lodes have been reported at many places in interior Alaska, none of them has been very thoroughly examined or seriously considered for capital investment, because of the much greater unit price of gold and its more ready recovery. Rich deposits have been found on the Canadian side of the international boundary near the head of the Portland Canal, and it is there that the famous Premier silver and gold mine is situated. The geologic conditions on the Alaska side of the boundary, in the Hyder district, seem to be comparable in places to those on the Canadian side, and this similarity has sustained interest in the search for profitable silver and gold deposits in American territory.

Copper. The output of copper from Alaska mines in 1936 was 39,267,000 pounds, valued at $3,720,000. Large as these amounts are, they are small compared with the production for the period 1915 to 1927, when it practically never fell to less than 50,000,000 pounds a year. In 1916, it was 119,600,000 pounds. The great bulk of the copper mined in the Territory came from the group of mines operated by the Kennecott Copper Corporation in the Copper River region. These mines are now inactive, following the exhaustion of paying ore.

Lead. The lead produced from Alaska ores in 1937 is estimated to have been 2,004,200 pounds, valued at $120,400. Practically all of this was recovered as a by-product from the gold ores.

Lead ores are widely found throughout the Territory, and in the past, shipments valuable at least in part for their lead content have been made from many areas in southeastern Alaska, especially the Hyder district; from the Yukon-Tanana region, especially the Kantishna district; and even from faraway Seward Peninsula, at the Omalik mine, and from the Kobuk district, in the vicinity of Shungnak. Lead is, however, a heavy, low-priced commodity which requires rather elaborate treatment to produce in readily salable metallic form, and these drawbacks, coupled with the low current price for the metal, act as deterrents to the development of lead deposits in remote regions.

Platinum Metals. The total quantity of metals of the platinum group produced in Alaska in 1937 was 8,131 ounces, valued at $397,600.

The most outstanding development in the placer platinum-mining industry in Alaska, as in the United States proper, was in 1936, in the Goodnews Bay district, in the lower Kuskokwim region. Places where platinum has been recognized are widespread through other parts of this territory.

Tin. For many years Alaska has been a small but regular producer of tin and, in the course of the more than thirty years since tin minerals were discovered on Seward Peninsula and later elsewhere in the Territory, has shipped tin worth more than $1,255,000. During this period the greatest annual production was in 1916, and was equivalent to 139 tons of metallic tin. In the period between 1920 and 1935, the average yearly output has been only about 13 tons. From 1935 on, however, there was a great increase in production, due to a new company working in the vicinity of Tin, near the extreme western tip of Seward Peninsula. Ore recovered in 1937 is estimated to have contained about 182 tons of tin, valued at $202,300.

In addition to this new camp there were several smaller ones at various points in the same general region that produced limited quantities by ordinary open-cut methods of placer mining. A small amount of placer tin was also recovered from the gold-mining operations in the Hot Springs district of the Yukon region. Few parts of the tin area are far from the sea, so that transportation charges are moderate. The flying time from Nome is only about an hour.

Coal. The coal produced by Alaska mines in 1937 was 131,600 tons. This, except for a slightly higher output in 1936, was the largest output during the whole period that coal has been mined in Alaska. In addition to the local production, 31,556 tons of coal were imported in 1937. The average price of the local product was about $4.20 per ton.

The Alaska Railroad uses much coal for locomotive and power fuel, but many orders for domestic use in the railroad belt are also filled. The largest single customer of the Healy River mine is a large gold-dredging concern in the Fairbanks district. A considerable power and domestic market for the product is being built up in interior Alaska.

In the Bering River field, where extensive deposits ranging in composition from bituminous coal to anthracite have long been known, prospecting or other development work relating to the coal resources remains at a standstill. This field has much potential value, but the present coal consumption of Alaska is not such as to induce large companies to undertake extensive projects. Furthermore, the preliminary work already done indicates that some complex geologic conditions will be encountered, so that desultory prospecting by small, poorly financed, or technically unskilled operators holds little promise of success, and full development must await a company that is able to go into the matter in a large way and bear the necessarily uncertain expense of exploring a new field.

The whole problem of the development of Alaska's coal resources is exceedingly complex, for while there are in the Territory large areas containing coal-bearing rocks, the local demands are fairly well supplied by existing mines; and to attempt to enter a larger field would require considerable outlays for developing mines and the market. Obviously, many consumers are unwilling to commit themselves to any specific agreements to purchase until they are sure that the coal offered them is procurable at a satisfactory price; and the mining operator, of course, in the initial stages can offer little definite assurance as to costs and availability of his product until he is fairly certain of a market.

Petroleum. No petroleum was produced from any Alaska deposits in 1937, although there was some new drilling in the Iniskin-Chinitna district. For a number of years there was a small but significant supply of petroleum from wells of the Chilkat Oil Company in the Katalla district, on the coast east of the mouth of the Copper River. The boiler house at the refinery was destroyed by fire late in December, 1933, and it has not yet been considered desirable to replace the building and equipment, because the outlook was not encouraging for the profitable operation of the property. The wells were relatively shallow; few of them were more than 1,000 feet deep and none of them more than 2,000 feet deep. Even when the Chilkat Oil Company's property is in operation, the small domestic production of petroleum from the Katalla field is not adequate to supply local needs, and the demand for large quantities of petroleum products throughout the Territory is met principally by imports from the States.

Miscellaneous Mineral Products. The list of minerals of value that have been found in Alaska is long. Those which have been produced in quantities large enough to be of more than local significance and which have been the basis of profitable mining industries include, among metallic products, antimony, arsenic, bismuth, chromium, iron, manganese, mercury or quicksilver, molybdenum, nickel, tungsten, and zinc; and among nonmetallic products, asbestos, barite, building stone, clay, garnet, graphite, gypsum, jade, limestone, marble, and sulphur. The only ones produced in quantities worth as much as a few hundred dollars, in 1937, were antimony, limestone, and quicksilver.

Although these various mineral commodities yield negligible monetary returns at present, yet their diversity, their wide distribution, and the interest displayed in the search for them indicate that they already play an important part in the mineral economics of the Territory and are destined to become even more significant as the development of Alaska proceeds.

FUR

From the days when Russians were lured to Alaska by fur in the latter half of the eighteenth century, the fur resources have played an important part in the economy of the Territory. The Natives have depended on fur for a substantial part of their livelihood since the world's fur markets were first opened by Russian traders; and many whites also rely on it. Because of the small total population, this long-continued drain has not made serious inroads on the originally abundant fur resources, with the exception of the seal and the sea otter, which were almost exterminated but are now being restored.

Many miners, fishermen, and other seasonably occupied workers spend the winter trapping. The principal fur bearers are fox—black, silver, gray blue, and white—marten, mink, otter, wolverene, weasel or ermine, muskrat, beaver, lynx, land otter, polar bear, and black, brown, and grizzly bear. From these animals are taken furs to the annual value of from two to four and a half million dollars.

The shipment of furs from Alaska is stringently regulated, and whether by mail, express, freight, or personal baggage must be reported to the Alaska Game Commission at Juneau on blanks furnished for the purpose by local post offices.

For the sake of better administration of its great fur production the Territory of Alaska is divided into eight fur districts. The regulations of the Department of the Interior on fur trapping are published in a booklet, "Regulations Relating to Game, Land Fur Animals and Birds in Alaska," a copy of which can be had by writing to the Alaska Game Commission, Juneau, Alaska.

Fur District No. 1 includes southeastern Alaska. Here the trappers are usually fishermen during the summer, and their gasoline launches, beached in sheltered nooks, form their trapping headquarters during the winter.

Fur Districts Nos. 2 and 3 are along the coast of Bering Sea, where the harbors are few and far between, and the shore is exposed to the full sweep of the winter storms.

Fur Districts Nos. 4 to 8 include both the lowlands of the coast and the northern Interior, where the trappers travel by boat in summer, by dog team in winter, and by airplane all the year round.

Fur farming is an important and valuable adjunct to the production and conservation of wild fur animals. Blue-fox ranching on the various islands in the Aleutian group and the smaller islands in Prince William Sound and southeastern Alaska has become a well-established interest. Silver foxes are also being raised successfully in some portions of the Territory, notably on the Kenai Peninsula. Mink ranching is now on a firm basis, and considerable opportunity exists for expansion in the pen-raising of fine stock, for which Alaska has become famous. Fish, the basic food, is plentiful. Although attempts have been made at various times—and are still in progress—to raise other fur bearers, such as marten, muskrat, white fox, land otter, and beaver, the returns have not shown much hope for commercial development. During the fiscal year ending June 30, 1937, two hundred and forty fur-farming licenses were issued by the Alaska Game Commission.

At the present time fur animals of Alaska are cropped as closely as appears consistent with the maintenance of a safe breeding stock. Reports on the exports of Alaska for the fiscal year ending June 30, 1936, place fur skins third of all commodities as to total value, with shipments, including seal fur, amounting to $2,264,467.

According to figures compiled by the Alaska Game Commission, the total value of furs shipped during a recent good year (1937) was about $2,313,000. From 1927 to 1936, over $24,000,000 worth of furs were exported. In round numbers, mink pelts were shipped during these years to the value of $4,235,000; red fox, $4,364,000; blue fox, $3,983,000; white fox, $2,032,000; cross fox, $1,012,000; and black fox (including silver fox), $779,000. Beaver pelts were shipped to a value of $3,068,000; muskrat, $1,930,000; lynx, $1,416,000; otter, $554,000; marten, $376,000. Weasel, wolf, wolverene, polar and black or glacier bear, and coyote pelts were shipped to a total value of $416,000, and blue fox from the Pribilof Islands to a total of $243,000. Squirrel, hare, and marmot were shipped in negligible quantities.

REINDEER

Almost a quarter million square miles of Alaska land consist of tundra, unsuitable for farming, and upon which sheep or cows would quickly starve. On the vegetation that covers the tundra, however, millions of reindeer could feed and grow fat. Reindeer are not indigenous to Alaska, and the origin of the present herds dates only from 1891, when the Bureau of Education of the Department of the Interior imported sixteen reindeer from eastern Siberia to Teller Mission on Seward Peninsula to provide a livelihood for the Eskimos and to furnish them food and clothing. Previously, twelve head had been imported by Sheldon Jackson with private funds and were successfully raised in Unalaska. The stock imported to Teller was increased in the next ten years to 1,280, and Laplanders were brought from northern Europe as herders to instruct the Eskimo in the methods of caring for the reindeer. Under a contract system Eskimos were allowed to earn a certain number of animals in return for their labor. Conditions proved so suitable that the original stock has increased to a reindeer herd conservatively estimated at 600,000 head. They are distributed over the coastal areas of Bering Sea and the Arctic Ocean from the Alaska Peninsula on the south to Point Barrow on the north. The purpose of the importation has been accomplished; the dwindling Native food supply consisting of game and fish has been augmented by a more dependable source. Proper range and animal management will insure the perpetuation of this valuable resource and the well-being of the Native population.

For several years no white Alaskans engaged in raising reindeer, but gradually, as the industrial possibilities became more apparent, outside capital attempted to establish a commercial reindeer business for the marketing of hides and meat in the States. In 1914 a commercial company acquired a number of deer that later developed into large herds, establishing, at least to some minds, a color of title to grazing areas occupied by these privately owned deer. Eskimo owners of small herds, fearing the encroachment of grazing ranges and finding their own herds must be moved on or run the danger of being mixed with commercial herds, complained. Protests, affidavits, and petitions accumulated; reports and surveys were made; a House Committee was appointed at Washington and held hearings—all in a cloud of recrimination, indignation, charges, and counter-charges. In 1930 exports amounted to 20,000 hides and 2,500,000 pounds of meat. Since 1930 the commercial enterprises have shrunk, and are not likely to be revived, because of the enactment of the Alaska Reindeer Law of 1937 under which all reindeer owned by whites are to be bought by the government and managed for the benefit of the Natives. The sum of $2,000,000 was authorized for this purpose. The Reindeer Law was enacted "to provide subsistence for the Eskimos and other Natives of Alaska by establishing for them a permanent and self-sustaining economy; to develop Native activity in all branches of the reindeer industry; and for other purposes." The Reindeer Service was transferred to the Office of Indian Affairs in 1937.

At present more than two-thirds of the total number of reindeer on the range are owned by Native cooperative associations, which insure the Eskimos an ample supply of food and clothing, with the least danger of its being diverted to individual gain, whether by Natives or white men. In 1937 Natives killed nearly 37,000 reindeer for food and clothing. It is estimated that from 13,000 to 15,000 Natives, including dependents, rely on reindeer as an essential source of food and clothing.

Practically every phase of the industry has been improved, including management of the range and herds, and handling of the products after slaughter. In 1920 one of the first scientific investigations of the problem was undertaken by the Biological Survey. In 1928 a Reindeer Experiment Station was established at College with substations at Nome and on Nunivak Island. Cooperating agencies included the Alaska University, Alaska Railroad, and several bureaus in the Department of Agriculture. Investigations have been concerned with feeding, breeding, animal habits, morphology, range capacities, and packing-plant methods.

Of the estimated 315,000 square miles of grazing land in Alaska, there are 200,000 square miles considered suitable only for reindeer. Most of this consists of the vast stretches of treeless tundra bordering on the Bering Sea and the Arctic coast. Since grazing is on a year-round basis, each herd must be provided with suitable range to meet the needs of spring, summer, fall, and winter. Herbaceous and shrubby vegetation which provides the forage on summer range grows rapidly and withstands heavy grazing. Lichens and mosses, however, which must be depended upon for winter range, do not furnish an annual crop, grow very slowly, and are easily destroyed by trampling or close cropping, especially under dry summer conditions. On many areas where reindeer grazing has been carried on for several years, the original lichen cover has disappeared and been replaced by perennial species of vegetation not at all suitable to winter use. It is estimated that from fifteen to twenty years may be required to rehabilitate some of these areas. Winter range must have complete protection during late spring, summer, and early fall, to insure perpetuation of the lichen cover and provide a sure source of winter feed.

The menace to reindeer grazing in recent years has come from predatory animals, especially wolves and coyotes. Other difficulties have operated to slow up Native progress in reindeer management, including parasites and other insect pests, rigorous climatic conditions, the absence of transportation and communication in the Interior, mixing of herds and ownership disputes, lack of marketing equipment, and the expense of shipping meat over 2,000 miles by water to market in the States.

Fire is very harmful to the tundra vegetation. Areas adjacent to population centers and along routes of travel show greatest fire damage, and many large areas have been completely denuded by repeated burning.

Investigations to date indicate a potential grazing capacity of 4,000,000 animals with a possible animal yield of about 1,000,000 hides and 150,000,000 pounds of meat. The importance of reindeer to the social and economic welfare of the Natives can scarcely be overemphasized. The range conservation lesson of devastation in the West following pioneer settlement needs to be heeded in Alaska, otherwise the cover resources eventually will disappear, and with them the reindeer herds and the security they afford to the remote Native communities.

AGRICULTURE

The total land available for farming and grazing in Alaska has been estimated at about 100,000 square miles, of which 65,000 square miles are suitable for agriculture and 35,000 for grazing. Since this area is as extensive as the combined areas of all the North Atlantic states as far south as Virginia, it is potentially capable of supporting a large population. The principal areas suitable for agriculture are found in the Matanuska and Tanana valleys.

Alaska is in general a mountainous country. Only the gentler slopes of the hills are arable, and practically every foot of soil has to be cleared before it can be put under cultivation. Farming is necessarily restricted to a few areas, because the country is thinly populated and transportation facilities are limited.

Grains, such as rye, wheat, oats, and barley, are successfully grown in the Interior; and the hardier vegetables, such as radishes, mustard, turnips, kale, potatoes, and lettuce, can be grown almost anywhere and are frequently seen in gardens well within the Arctic Circle. With ordinary care, along the coast and in the Interior may be grown carrots, parsnips, parsley, peas, cress, cabbage, cauliflower, Brussels sprouts, onions, spinach, beets, potatoes, rhubarb, and garden herbs. Corn, tomatoes, beans, eggplant, melons, and other vegetables requiring a long hot summer cannot be grown under ordinary conditions. Attempts to grow orchard fruit have failed, but berries are plentiful everywhere. Hay can be made every season from native grasses, and ensilage is prepared from grass, grain, or a combination of field-peas and oats.

While the farm products grown in Alaska compare favorably in quality with those grown in the States—Alaska potatoes, for instance, took first prize at a Minnesota State fair—the 15,000 permanent residents within distributing distance of the four principal farming areas consume annually farm produce valued at almost a million dollars—imported from Seattle. And only about 2,000 Alaskans, including those in the government cooperative colony at Matanuska, are farmers.

Mosquitoes somewhat impede farm operations. It is necessary for men working in the fields during the months of May, June, and July, to wear head nets and canvas gloves. A number of farmers prepare smudges in the pastures, so that the cattle, when tormented seriously by mosquitoes, may stand in the smoke for relief.

Farm lands in Alaska may be acquired either by homesteading or by purchase. Homesteads may be located on agricultural land by citizens of the United States or by one who has declared his intention to become a citizen. The homesteader must establish residence within six months of taking up the homestead, and must continue it for at least seven months out of each year, for three years. He must cultivate one-sixteenth of his homestead within the first two years and one-eighth before the end of the third year, must erect a habitable house on the land, and must prove the homestead within five years from the date of entry. Full information may be obtained by writing the General Land Office at Washington, D. C., for the laws and regulations relating to public lands in the Territory. Circular No. 1, "Information for Prospective Settlers in Alaska," published by the University of Alaska, contains much valuable information for the prospective farmer.

A homesite of not more than five acres may be acquired by any citizen of the United States, the requirement being legal residence on the tract in a habitable house for a period of three years. Many fishermen, miners, and others who wish to make a home and garden beyond the limits of incorporated towns take advantage of the homesite law. Certain areas within the national forests may be acquired in similar manner. Settlers, miners, residents, and prospectors may take from the national forests, free of charge, green or dry timber up to 10,000 feet of saw timber and 25 cords of wood a year, for personal use but not for sale.

Below are described the main farming regions today, with some indication of the climate, soil, and produce grown.

Matanuska Valley. At the head of Knik Arm of Cook Inlet, about 125 miles inland, is Matanuska Valley. It is reached by the Alaska Railroad and by automobile highway from Anchorage. The high latitude gives the valley long winters, short summers, and great variation in the length of day between winter and summer.

Because of the modifying influence of the surface features and the warm coastal waters, the Matanuska Valley region has temperate summers, moderately cold winters, and a moderate rainfall. The climate lacks the extremes of temperature and the light precipitation that characterize the great interior valleys of the Yukon River and its tributaries. The mountain ranges also protect the region against fierce blizzards.

Wind storms of sufficient intensity to cut the snow from cleared and exposed places are not common, but do occur frequently enough to endanger the life of exotic perennials, such as ornamentals and bush fruits. During May, as the fields dry and are prepared for seeding, occasional winds cause some damage by blowing the fine soil from the field. As larger areas are cultivated, this condition will be aggravated unless proper conservation methods are applied.

Tanana Valley. Two hundred and forty miles north of Matanuska, and separated from it by the rugged Alaska Range, is the Tanana Valley. The length of the valley is approximately 205 miles by airline and 317 miles by river, and the maximum width is 70 miles. The 7,000 and more square miles, or 4,480,000 acres, include in their physiography bottom or valley land and benchland. It is the northernmost region available for agricultural settlement in Alaska.

The frost-free period in this region extends from about May 20 to

September 5. During the growing months, beginning with May, the normal temperature shows a steady rise until it reaches its peak in July. The winters are cold, but healthful and invigorating. The average annual snowfall for five years preceding 1937 was 59.39 inches. Lack of winds in this region permits the light feathery snow to remain evenly distributed over the ground most of the time.

During the growing season the days are long. The total precipitation ranges from 8.5 to 16 inches. Approximately one-half comes during the growing season.

Most of the land is hillside or old river-bottom land. Hillsides with a southern exposure are considered the most desirable for farming, because crops grown on them mature earlier than those grown on river-bottom lands. The lowlands are productive and yield good crops of forage. The soil is prevailingly sandy.

The most important farm crops are grain and potatoes. Oats and barley are grown both for grain and for forage. The yield of oats ranges from 36 to 75 bushels per acre, with an average of about 50 bushels. One farmer regularly produces from 10 to 12 tons of marketable potatoes per acre. Yields range from four to seven tons, and prices from $2.50 to $5.00 a hundred pounds.

Currants, either red- or white-fruited, produce dependable crops, the white out-yielding the red. Red raspberries have been grown many years commercially on south-slope land. Strawberries of hybrid origin have produced excellent crops, but for the most part this fruit is grown in gardens for home use. Loss of plants through winter injury occurs infrequently. At the abandoned Rampart Station a small field, uncared for, has produced regular crops for more than twenty years. Wild fruit, such as high bush and low bush cranberries, red raspberries, red currants, and blueberries, is fairly plentiful.

The Tanana region is well suited to dairying. Summer pasture is available for four months of the year. Hogs can also be produced profitably.

Southwestern Alaska. The agricultural regions of southwestern Alaska include the Alaska Peninsula and the treeless islands beginning with the Kodiak-Afognak group, and extending westward to the extreme end of the Aleutian Islands chain.

At the lower elevation on the mountainsides several types of grasses and a dense growth of mosslike plants form a good range for cattle during the summer. Any large area of beach rye and sedge grasses at the head of a bay can be harvested for hay and silage with a mowing machine, if the area is not cut too deeply by small streams. These grasses make dense growth and attain a height of about four feet. Numerous attempts have been made to raise livestock on the islands beyond Kodiak Island, but have failed in the past because of the high transportation costs.

KENAI PENINSULA. The western part of the Kenai Peninsula between Cook Inlet and the Kenai Mountains contains some of the best agricultural land in Alaska. The climate is never severe, being neither extremely cold in winter nor hot in summer. It is tempered by the warm winds from the Pacific Ocean, which is less than one hundred miles to the south in a direct line.

This region is destined to remain undeveloped, however, until economical transportation can be provided. On account of the shallow waters which border the shores of Cook Inlet, large ocean vessels must anchor from three to five miles out. During the winter when the rivers are frozen over, practically no transportation facilities are available for the larger portion of this valuable agricultural land. With the advent of a wagon road connecting the towns of Homer, Ninilchik, Kusilof, and Kenai with the present railroad, this fertile region will undoubtedly become more settled.

SOUTHEASTERN ALASKA. There is little agriculture in southeastern Alaska. The district is more densely populated than other regions, however, and limited areas at the heads of bays and on the tide flats are used for crops and livestock. Most of the small areas under cultivation are near towns which may be reached by small boats or by newly built roads. The principal crops grown for the market are carrots, rutabagas, cabbages, potatoes, strawberries, and raspberries. There are about three hundred head of dairy cattle in southeastern Alaska; the largest herds are located near towns. Milk produced in this region is bottled and supplied to the towns. Practically all feed for the animals is shipped from the States. Farmers who do not live near the towns are dependent upon native tide-flat grasses for forage. The cost of clearing land in southeastern Alaska is prohibitive, and farming operations are, therefore, limited to home gardening, trucking, and producing hay on isolated, grass-covered tide flats.

Healy. An area of about 200 square miles of land on the north slope of the Alaska Range with Healy as a center is believed to be a potential sheep-range country. On account of its elevation this region is treeless. No snow lies on the ground longer than three to seven days at any time, because of the high winds. The native vegetation consists of several types of bunch grass and sedges, native redtop, low bush cranberry, blueberry, dwarf birch, and dwarf willow. Enough native hay may be made to supplement the forage the animals obtain on the open range in winter. It is estimated that the carrying capacity of this range is 150 sheep per square mile. Range horses have been over-wintered for several years.

Kuskokwim and Yukon Valleys. There are many thousand square miles of potential agricultural land in these valleys, but its remoteness and inaccessibility, or the fact that the main lanes of travel have become established elsewhere, will undoubtedly cause it to remain undeveloped for a considerable period. This land is covered with a mixture of spruce and birch, indicating that it is able to produce crops similar to those now being produced in the Tanana Valley.

Fortymile Area. There is another considerable piece of agricultural land north of the Tanana River, between the Tanana and Fortymile, and more particularly along the South Fork of the Fortymile River, estimated at 750,000 acres. This large area has as yet no transportation facilities worthy of mention. The Bates Rapids in the Tanana River, some distance beyond Fairbanks, are of such a nature that only small and very powerful boats can pass them; and because of this very few boats navigate to the upper Tanana.

FORESTS

About 70 percent of the total area of Alaska, or about 400,000 square miles, is covered with vegetation of great economic importance to its inhabitants—forest, grassland, and tundra. The four million acres of spruce and hemlock along the southern coast produce saw-timber, shingles, poles, and common lumber, and are capable of supplying a million tons of newsprint a year forever. The forty million acres of smaller trees in the Interior hold the rivers in check, supply fuel for wood-burning river steamers and for the miner's and prospector's oil-drum stoves, furnish lumber for mining operations and building, and could contribute to the homesteading needs of a very large future population. The one hundred ten million acres of open woodland and grassland support large herds of big game and some local livestock, and on approximately one hundred million acres of tundra in the north and northwest roam the reindeer of the Eskimo.

The development of the vegetative resources of Alaska has barely started, and at present the Territory is in about the same stage as were the western states seventy years ago. The Federal government is now preparing to spend huge sums to correct some serious mistakes that were made in the handling of the resources of these states, and with this as an object lesson similar mistakes in Alaska can be avoided by planning for a proper use of its resources. These lands are now almost wholly in Federal ownership, and private use of them can be made subject to such restrictions as Congress and the responsible Federal agencies may prescribe. In interior and Arctic Alaska the white occupation has devastated by continuous fires the timber, grass, and tundra cover which are needed to support the varied and abundant existing wild life and provide a basis for future increased settlement.

THE INTERIOR FOREST. In the Interior, stands of sufficient density to be classed as forests are common but seldom continuous over extensive areas. The main forest occupies the better drained soils of valley floors, benches, rolling ground, and the lower slopes, seldom growing above an altitude of 2,500 feet and often holding to much lower limits, because of adverse local conditions. The wet lowlands are predominantly occupied by black spruce rarely exceeding six inches in diameter, with intermixed stunted tamarack, white spruce, and Alaska white birch. The trees often occur as scattered individuals or in small groups.

Growth in the Interior forest is very slow, and even under good protection and management may fall short of fully supplying timber needs of the future local population. Timber cutting, so far, has been confined to supplying material for local purposes—chiefly mining timbers and cord wood for fuel—and while the aggregate removed has been fairly large, it is only a negligible percentage of the total available. At the same time, fires and heavy cutting have about exhausted the supply of readily accessible material around some of the settlements.

The per capita consumption of timber in interior Alaska is high even for a frontier country. Its principal use is for fuel, during the long and intensely cold winters. Wood-burning river steamers and mining operations also make unusually heavy demands. Small sawmills operating at Fairbanks and elsewhere produce sawed lumber for local use. It seems reasonable to suppose that little of the Interior timber will ever come into the general timber-products market, though birch trees of the best quality are suitable for cabinetmaking and may be removed from some of the more accessible areas, such as the head of Cook Inlet. Local activities and future homemakers will need increasingly large quantities of forest products.

Coast Forests. The coast forest of southeastern Alaska and the Prince William Sound region is predominantly a mixed stand of western hemlock and Sitka spruce. Western red cedar and Alaska cedar are frequently associated with the two principal species, and any one of the four can occasionally be found as a pure stand of small extent. The forest has an almost tropical denseness. Down timber, which decays slowly because of almost continuous saturation from an abundant rainfall, is found in profusion, and a carpet of moss covers the decaying logs and the forest floor to a depth of six inches or more.

The forest extends from the edge of tidewater to altitudinal limits of about 2,750 feet in the southern and 2,000 feet in the northern sections. Commercial timber gives way at approximately 1,500 feet to stands of dwarfed, limby trees, which are designated "subalpine" and classified as noncommercial. With steep slopes the rule, the commercial forests occur largely in fairly narrow bands along the shorelines. A vast portion of the readily accessible area and perhaps as much as 75 percent of the timber of usable quality lie within two and one-half miles of tidewater.

National Forests. Most of the standing timber of the coast forests are in the Chugach and Tongass National Forests, which together make up the greater part of the land area of the southern coast from Portland Canal to Cook Inlet. The Chugach National Forest centers in the Prince William Sound region, and the Tongass comprises the greater part of southeastern Alaska.

The Tongass National Forest has higher present and potential economic value than Chugach National Forest, because of the better quality and the greater volume of its timber, a shorter haul to the general markets, and better water-power resources for timber-using industries. The Tongass includes about 16,550,000 acres, of which 3,000,000 acres contain timber of commercial value. The average stand per acre for the commercial forests of the Tongass is about 26,000 board feet, although individual large logging units frequently have 40,000 to 50,000 board feet per acre.

The greater part of the timber used in southern Alaska is purchased from the national forests. The annual cut of the forests increased from 8,000,000 board feet in 1909 to 43,000,000 board feet in 1936. The total for this twenty-eight-year period was 1,050,000,000 board feet. Most of the present output goes into lumber, but about 20 percent is used in the round for fish trap and wharf piling, or for hewn ties by the railroads of the Territory.

The forest resources of southeastern Alaska will undoubtedly be used chiefly to manufacture newsprint paper. Studies by the Forest Service indicate that the forests of this region, under a proper system of management, can produce at least 1,000,000,000 board feet of pulpwood annually in perpetuity under proper forestry measures. Converted into newsprint this represents a production of 1,300,000 tons, or more than one-fourth of the present yearly consumption in the United States.

6. COMMERCE

THE FACT THAT ALASKA has no land transport connections with continental United States has had a profound effect on its development. Western United States was built by successive waves of settlement along the frontier from the older centers; and the draft animals and covered wagons of the emigrant enabled him to provide his own transportation for the journey. Road and railroad extensions usually followed the pioneer trails. But today Alaska, as in the past, can be reached only by a considerable ocean voyage that requires a substantial outlay of cash by the prospective settler and presents difficult and costly operating problems to the prospective industrialist. The implements and tools of the settler or industrial worker, the clothes he wears, and much of the food he eats must be shipped over a long route. Any extensive markets for agricultural and other products are at the other end of this ocean journey.

In view of these facts, ocean transportation—its passenger and commodity rates, the frequency of its service and the character of its accommodations—constitutes to a large degree the "bottleneck" that determines the rate and manner of Alaska development. From the days of the gold rushes, ocean transportation has been a serious problem; one that has not yet been fully solved.

The major Alaska activities have always been seasonal, entailing a great movement of people and commodities northward during a few weeks of the spring and southward during a short period in the fall. This has concentrated and unbalanced traffic making it heavy in these periods and extremely light in the winter. One saving feature is the heavy round-trip tourist traffic of the three summer months. In spite of the comparatively large total volume of business handled during the year as a whole, these great seasonal fluctuations lend little encouragement to the building up of the frequent, low-cost, continuous service of modern vessels.

Less than one percent of the cargo and passenger traffic handled in Alaska ports originates outside of continental United States or is destined directly for foreign ports. For that reason, any consideration of the commerce of the Territory can be confined entirely to services between Alaska and the ports in continental United States.

The exports to Alaska before the crisis of 1929-33 and during the recovery period after 1933 averaged better than thirty million dollars a year, while imports from Alaska (exclusive of gold) averaged better than fifty million dollars a year. The import of gold from Alaska climbed steadily from $6,640,900 in 1922, to $9,864,400 in 1933; then, upon the increase in the price of gold, jumped sharply to $15,883,800 in 1934; and, consequent upon this stimulation of gold production, climbed to $20,373,000 in 1937.

Exports from the United States to Alaska, measured in volume of cargo movement, declined steadily from 1929 through 1932, with 1933 showing practically no improvement. An upward trend began in 1934 and continued steadily through 1936; in the latter year there was the largest export cargo movement to Alaska during the entire eight-year period. The improvement was largely due to increased movements of foodstuffs, paper and products, petroleum, and machinery; although other items also showed increases. The outstanding event was the movement of petroleum and its products, which for 1936 was practically double that for any preceding year. In 1937 the United States shipped to Alaska $42,701,000 worth of products, an increase over the previous year of over $4,000,000.

For the calendar year 1936, the total export cargo movement from the United States to Alaska, exclusive of tanker traffic, amounted to 374,802 tons, of which 53 percent went to southeastern Alaska; 21 percent to southwestern Alaska; 16 percent to Alaska Peninsula and the Aleutian Islands, and 10 percent to Bering Sea ports. More than 99 percent of the cargo movement was from Puget Sound ports, with 95 percent of the total movement from Seattle. A little over 10 percent of the total northbound cargo movement (excluding tankers) was by irregular services; the remainder being handled by the three lines regularly engaged in the Alaska trade with fixed sailing schedules.

The largest single commodity consisted of petroleum products. Other important items were tin cans, paper boxes and cartons, and salt—most of which presumably were for the Alaska fish-packing industry. Another large item was lumber and lumber products, including crate slats and box and barrel shooks, also for the fish industry. A relatively large movement was of coal and coke. To a very large extent, all were essential commodities, with only a small percentage of what may be termed luxury items.

Exports of Diesel oil, fuel oil, and gasoline in tankers from the United States to Alaska for the calendar year 1936 amounted to 81,507 tons, of which 78 percent came from California ports. The rest came from Puget Sound ports. More than half of it went to southeastern Alaska.

Beginning with 1929, import cargoes from Alaska to the United States fell off until 1932. Imports thereafter increased substantially in volume, although not equaling the peak years of the eight-year period from 1929 to 1936. The chief factor in the improvement during 1935 was the unusually large movement of salmon. Shipments of limestone, which during 1934 had fallen to nothing, were also resumed in 1935. The revival of copper shipments in 1936 was an important item in the improvement of import business. They were larger than for any period since 1931. It is interesting to note that the upturn in exports to Alaska began a year earlier than the start of the upswing for the traffic from Alaska. In 1937 Alaska shipped to the United States $81,906,000 worth of products, an increase over the previous year of nearly four and one-half million dollars.

Most of the southbound movement was to Puget Sound, the bulk of the movement going to Seattle. At least two-thirds of the inbound freight consisted of fish or fish products. Another large movement carried by the regular lines was 28,519 tons of ore and concentrates.

The total trade with Alaska during the fourteen calendar years from 1922 to 1936, inclusive, amounted to a grand total of approximately one and a third billion dollars. Of this total, about $450,000,000 consisted of exports to Alaska from the United States, about $760,000,000 of imports from Alaska to the United States, and about $133,000,000 of Alaska gold imported to the United States.

Present-day trade with Alaska, in terms of dollars, is quite largely a one-way business. Alaska sends to continental United States products of the fisheries and mines, and furs, and imports supplies and foodstuffs. These imports can never balance the value of the exports so long as there are only 60,000 people in the whole Territory, including Natives.

Were Alaska foreign soil, this unfavorable trade balance might cause alarm. Alaska is not a foreign country, however, and its products for the most part do not compete with those of continental United States. The salmon, to be sure, may be regarded as indirectly competitive with other sea foods; but a substantial part of the salmon canned in Alaska is re-exported and represents a by no means unimportant item in American export trade. Copper is directly competitive. Furs are not, nor is gold. The balance of merchandise trade unfavorable to continental United States statistically is in actuality highly advantageous, because of the manner in which the fisheries are organized and the nature of the commodities sent to continental United States—especially gold.

Though continental United States may be the logical market for Alaska's products, trade, of course, does not have to be a two-way exchange. It may be three- or more-cornered. It is frequently pointed out that Alaska enjoys remarkable strategic advantages in trade by virtue of its location on the great circle course to the Orient.

In fisheries, the most important industry today in Alaska, the opportunities are obviously limited. The competition is Japanese, and, because of the differences in production costs, particularly labor, there would be small prospect of developing any substantial trade with Alaska's nearest market outside the United States and Canada. Mining also suggests limited prospects for this type of development, since the chief product of Alaska mines today is gold. But gold shipped from Alaska to the Orient, even if this were possible, would not necessarily generate a back-flow of goods in exchange, and therefore might not be usable as one corner of a triangular trade. Some time in the future coal, oil, and copper might become the basis for such trade.

Fur trapping, the third largest industry in Alaska, holds some limited possibilities for direct foreign trade. Probably no type of specialized agriculture could be developed which would permit participation in the export markets, especially those of the Orient. Products of the forests might some day provide an opportunity for export trade. If and when a newsprint industry develops in Alaska, a portion of its foreign market will doubtless be found in the Orient, though as yet this may be regarded only as a speculative possibility. There is, however, the thought that, if pulpwood or newsprint is developed in Alaska, some competition with Canadian exports to the United States will inevitably result.

Passenger service between Alaska and the United States and Canada is an important part of Alaska commerce. By far the greatest proportion of the business both northbound and southbound is first-class. The next largest movement consists of third-class or steerage passengers. Practically the entire movement northbound and southbound is via Seattle. The calendar year 1936 showed a total of 18,617 outbound passengers to Alaska, a total of 20,502 inbound passengers from Alaska, and 4,996 cruise passengers, making a total movement for the year of 44,115. While most of these were handled by the lines operating regular services, a total of 732 northbound and 1,206 southbound passengers were carried by irregular services; many of the passengers taken by the irregular services went to or came from points north of Seward. In 1937 an increase of 475 passengers over the previous year was noted.

Passenger movement between the United States and Alaska, both northbound and southbound, reached bottom during 1932 and 1933. The upturn in both directions began in 1934 and continued with increasing volume through 1936. During the six-fiscal-year period of 1929 to 1934, the southbound movement exceeded the northbound movement (exclusive of cruise passengers) by 5,564 passengers. But beginning with 1935, the northbound movement (exclusive of cruise passengers) exceeded the southbound, presumably indicating an increase in the population of Alaska.

Three steamship companies operate regular freight and passenger services between the United States and Alaska. For all, Seattle is the base port in the United States. They are the Alaska Steamship Company, the Alaska Transportation Company, and the Northland Transportation Company.

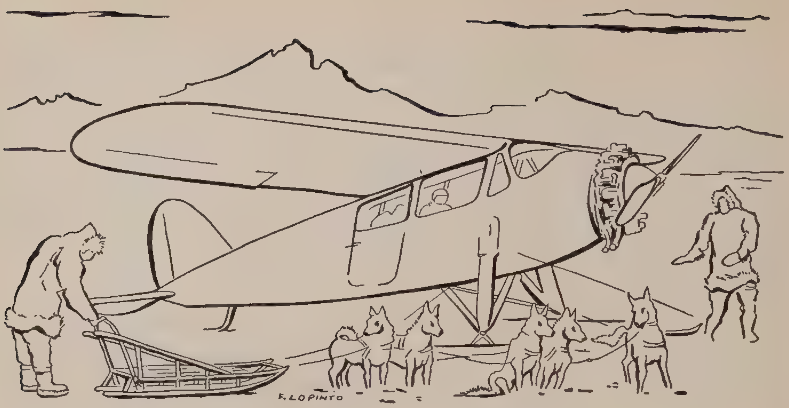
The Alaska Steamship Company is the only carrier regularly serving Alaska points north of the Alaska Panhandle, furnishing a minimum weekly service the year round between Seattle and principal Alaska ports as far north as Seward. During the summer season, this company greatly increases its sailings, running a monthly direct service from Seattle to the Alaska Peninsula, Aleutian Islands, and Bering Sea ports, including Nome and St. Michael. In addition, feeder services are run practically the year round to and from northern Alaska points to connect with the regular service of the Alaska Steamship Company from Seattle to Seward and Cordova.

The Northland Transportation Company maintains weekly service the year round between Seattle and southeastern Alaska. In addition, this company has from one to two steamers a year which it loads at Alaska points with canned salmon and carries, via Seattle and other Pacific Coast ports and the Panama Canal, to Atlantic and Gulf ports.

In addition to the services of the regular lines, other trips are offered occasionally by carriers following no regular route. Some of these are with vessels owned by salmon canneries carrying their own business; others are chartered.

Two Canadian lines serve Alaska from Vancouver and Prince Rupert, B.C. These are the Canadian Pacific (a part of the Canadian Pacific Railway system) with five steamships in the service, and the Canadian National (a subsidiary of the Canadian National Railways) with three steamships. All sailings of the two Canadian lines are from Vancouver via British Columbia ports—such as Powell River, Ocean Falls, Alert Bay, Prince Rupert—to the Alaska ports of Ketchikan, Wrangell, Juneau, Taku Glacier, Skagway, and sometimes Sitka. Practically all freight carried by these lines originates in Canada and passes in bond through Wrangell and the Stikine River or via Skagway for final delivery into Canadian Yukon and northern British Columbia. The Canadian National service is maintained only during the summer months of June, July, and August. Between September and the first of June they have no service. The Canadian Pacific, however, runs one vessel the entire year as far as Skagway. During the summer tourist season, this service is augmented with the four other vessels.

The Alaska coastwise trade and the trade between the United States and Alaska are subject to the coastwise laws of the United States and are therefore regarded as domestic trades. The navigable waters of the Territory are subject to the Federal laws enacted for the protection and preservation of the navigable waters of the United States. The activities of the corps of engineers in Alaska for the maintenance and improvement of rivers and harbors for navigation embrace dredging of channels, construction of breakwaters, administration of laws affecting the navigable waters of the Territory, and surveys and examinations of waterways for the preparation of definite projects for improvement—all as authorized and directed by the Congress.



7. TRANSPORTATION

ALTHOUGH THE KEY to the development of Alaska is ready access to its productive areas, its vast size and difficult terrain present many barriers to building a unified transportation system. Weather conditions in the Interior and the northwest add to the difficulty and expense of maintaining adequate transportation in these areas during a large part of the year. The seasonal character of Alaska's major industries complicates the problem.

Four of Alaska's seven cities of 1,000 or more population are on all-year ocean routes, and two are located on the Alaska Railroad. Nome has no convenient method of land transportation, and water transportation is possible only during the summer months.

Airways. A large part of the burden of transportation falls on the airplane, for although Alaska may not be ideally suited for aviation, aviation is ideally adaptable to Alaska. In 1938, there were 109 aviation landing fields in the Territory, in addition to a number of seaplane floats. About 155 modern aircraft flew 5,634,461 miles in the fiscal year ending June 30, 1938. In the same year almost three and one-half million pounds of express and freight were carried by air. No regular scheduled passenger plane service was available in 1938 between continental United States and Alaska, but eventually a trunk line will carry mail, passengers, and freight along the coast from Seattle, Washington, to Juneau via Ketchikan and Petersburg. The dog team, of great historic importance in Alaska's development, has been superseded by the plane, except for short hauls.

One of the first demonstrations of the feasibility of airplane travel in Alaska was the flight of four army De Haviland airplanes under the command of Capt. (now Major) St. Clair Street, United States Army Air Corps, from Mineola, New York, to Nome, Alaska, and return, between July 15 and August 24, 1920. The flight was conceived by Brig. Gen. William Mitchell, then assistant chief of the United States Air Service, whose interest in Alaska and its resources was aroused during his service on the construction of the government Alaska telegraph line as an officer of the United States Army Signal Corps. This flight definitely showed that air transportation in Alaska was practical. The round trip of 9,000 miles was completed in 112 hours of flying. The attention of the entire nation was attracted to the expedition, which made many short flights—partly over uncharted country—beyond the Great Divide of the Canadian Rockies.

Four years after the army flight to Nome, the Post Office Department shipped a plane to Alaska in order to determine the practicability of air mail service. Lieut. Carl Ben Eielson (now dead) was chosen for these test flights. Eight were made during the months of February, March, April, and May, 1924, between Fairbanks and McGrath, Alaska, a distance of 272 miles. The test route, which required eighteen days one way by dog team, was made by air in about three hours. The average weight of mails carried on the outbound trips was 302 pounds, and on the inbound trips 116 pounds. The tests terminated with the eighth flight, when the plane was damaged. So far as the records of the Post Office Department show, Lieutenant Eielson was the first carrier of mail by airplane in Alaska.

National attention was next drawn to Alaska air travel in 1924 by the Army Around-the-World Flight of four Douglas cruisers, which covered 28,000 miles in a total flying time of 371 hours and 11 minutes. This flight has been said to be of as great importance to the world as the accomplishment of Magellan. It was undertaken to demonstrate the feasibility of aerial transportation and communication between continents; ability to make long flights over portions of the world far removed from well-organized trade routes without other extensive transportation systems; to prove that aircraft could operate under all climatic conditions; to show the world that this newest form of transportation was equal to the most rigorous flying conditions; and to bring to the United States—the birthplace of the airplane—the signal honor of being the first nation to circumnavigate the globe by air.

The first Alaska aerial mapping and reconnaissance expedition, conducted by the Navy in 1926 under the command of Lieut. B. H. Wyatt, demonstrated a practical use to which the airplane could be put. Three amphibian planes were assigned for the work, leaving San Diego, California, on the 24th of May, and returning on the 23rd of September of the same year. The mine-sweeper *Lark* served as a seaplane tender.

In May, 1926, Capt. Roald Amundsen, the famous Norwegian explorer, Lincoln Ellsworth, the American sportsman, and Gen. Umberto Nobile, the Italian airship designer, left Kings Bay, Spitsbergen, with a crew of seventeen in the airship *Norge* (654,000 cubic feet capacity) to fly over the North Pole to Alaska. Although Nome had been the destination, storms forced a landing at Teller. The 2,000 miles from Spitsbergen to Point Barrow was covered in 46 hours, but because of bad storms 25 hours were required to navigate the 700 miles between Point Barrow and Teller. The actual mileage covered by the *Norge* in its flight, according to the report of Commander Nobile, pilot, was 3,291 miles.

The flight of the *Norge* was reversed when Lieut. Carl Ben Eielson and Capt. George Hubert Wilkins flew their Lockheed Vega plane from Point Barrow, Alaska, to Spitsbergen in April, 1928. The plane carried a considerable overload of gasoline and oil, and three attempts to take off were made before it succeeded in leaving the rough and icy surface at Point Barrow. A pair of metal skis broke with each unsuccessful attempt. Temperatures encountered during the flight ranged from 33° above to 48° below zero. Except for the inconvenience and delay of warming motors before starting in low temperature, the cold of the Arctic did not appear at any time to prevent the proper functioning of the motors. The difficult feat of navigating over the top of the world terminated in a very severe storm at Green Harbor, Spitsbergen, where the fliers had to await the breakup of the Arctic ice before a boat from Norway could bring them out.

A flight that attracted attention was that of Colonel and Mrs. Charles A. Lindbergh from New York to Tokyo via Canada, Alaska, and Siberia during July and August, 1931. The route led from New York to Ottawa, Canada; Point Barrow, Shishmaref, and Nome in Alaska; Petropavlovsk in Siberia; on through the Kuriles Islands to Tokyo, Japan. No difficulties were experienced during the flight over Alaska.

World attention was again directed to Alaska's advantageous position along the intercontinental airway when Wiley Post and his navigator, Harold Gatty, landed at Solomon Beach, 36 miles from Nome, and again at Fairbanks, for refueling on their flight around the world from June 23 to July 1, 1931. The distance of 15,474 miles was covered in the elapsed time of 8 days, 15 hours, and 51 minutes. Post broke this record on his solo flight around the world in 1933, completing the journey in the elapsed time of 7 days, 18 hours, and 49 minutes. During this flight he landed at the town of Flat and again at Fairbanks, Alaska.

A demonstration of the feasibility of moving a tactical unit of army aircraft from the United States to Alaska was made in July and August, 1934, with the mass flight of ten Martin (B-10) bombers, under command of Lieut. Col. (now Brig. Gen.) Henry H. Arnold, from Washington, D.C., to Fairbanks, Alaska, in 33 hours and 15 minutes flying time, and elapsed time of five and one-half days. Seven intermediate landing fields were used. The return flight to Washington, D.C., via Seattle, using five intermediate landing fields, was completed in approximately 29 hours flying time. The trip from Juneau, Alaska, to Seattle was made nonstop, entirely over water, following the coastline. This flight photographed from the air 20,000 square miles of Alaska territory in three days. Since then numerous and much larger mass flights have been made by the Navy to Alaska.

While on a "vacation trip" to Alaska in 1935, Wiley Post crashed with his passenger Will Rogers near Barrow on August 15, and both men were instantly killed. Two successful nonstop flights by Russian fliers from the USSR to the United States were made in the summer of 1937, followed by a third and disastrous attempt. Sigismund Levanevsky took off from Moscow on August 12, 1937, piloting a huge four-motored plane with a crew of six men, in a nonstop flight to Fairbanks. The plane was heard from for the last time when it reported over the North Pole, and a fruitless search was made for it lasting a full year.

Howard Hughes made a record round-the-world flight in July, 1938, flying with four companions from New York City to Paris, Moscow, Omsk, Yakutsk, Fairbanks, Minneapolis, and New York City. Leaving at 7:20 P.M. on Sunday, he returned to Floyd Bennett Field at 2:37½ P.M. on Thursday, having covered 14,716 miles in 91 hrs., 8 min., 10 sec.

Many government agencies make use of planes in Alaska. The Post Office Department permits its contractors on certain star routes to use them when practicable; nurses and doctors are transported to outlying districts to aid in the control of epidemics, and sick persons are rushed to hospitals by plane; large areas have been mapped by the United States Navy Alaska Aerial Survey; the Coast Guard uses planes to protect life and property, and enforce the law; various conservation agencies patrol fishing grounds by plane, and the Bureau of Indian Affairs relies greatly on planes for the movement of personnel and emergency supplies. The Weather Bureau makes regular plane observations at Fairbanks, and the Alaska Communications System handles many weather and other messages for planes daily.

HIGHWAYS. Roads and trails under the supervision of the Alaska Road Commission in June, 1937, totaled about 11,000 miles. Only 2,000 miles in all Alaska, however, were suitable for automobile and truck traffic. Included in the above number were almost 250 miles of highways in national forests, under the supervision of the Department of Agriculture, about 80 miles of highway in Mt. McKinley National Park, and about 250 miles of road constructed by the Territorial Road Board.

Not until 1898-9, thirty years after the purchase of the Territory, was any effort made by the Federal government to explore lines for roads and trails. During this thirty-year period, travel was confined largely to the open waterways in summer and their frozen courses in winter. Mining machinery and other supplies were usually transported from the coast or river landings over the snow in winter, with some preliminary "brushing out" of the trail when necessary. Travel across country in summer was usually possible only on foot or by pack horse. The numerous swift and deep streams made this mode of travel difficult and often dangerous.

In the summers of 1898 and 1899, the War Department sent out expeditions under Captains Abercrombie and Glenn to explore routes from Valdez, the head of Prince William Sound, and from the head of Cook Inlet, to the interior, with a view toward connecting the coast with the navigable waters of the Yukon. Much valuable information was obtained by these expeditions. The existence of a feasible route from Valdez by way of Keystone Canyon and Thompson Pass was first made known through the explorations of the party under Captain Abercrombie. Lieutenant Herron, of Glenn's party, discovered Rainy Pass and made his way through the Kuskokwim country to the mouth of the Tanana, on the Yukon, in 1899.

As a result of these explorations and studies, Congress made an appropriation of $100,000 for roads and trails in Alaska for the year 1901. A Board of Road Commissioners to operate under the direction of the War Department was set up in 1905, and the so-called "Alaska Fund" created, permitting the use within Alaska of all moneys derived from certain Federally imposed occupation and trade licenses collected outside of the incorporated towns. By subsequent amendments, 65 percent of this fund is available for construction and maintenance of wagon roads, bridges, and trails. The Alaska Road Commission, a Federal agency formerly known as the Board of Road Commissioners, constructs and maintains the greater part of the roads and trails in Alaska, having expended to June 30, 1938, nearly $26,000,000 for this purpose since 1905.

INTERNATIONAL HIGHWAY. Of utmost importance to the development of the Territory is the early construction of a highway connecting Alaska with continental United States. In 1933 a commission appointed to study the proposed highway reported it to be feasible at an estimated cost of approximately $14,000,000—$2,000,000 for mileage in Alaska, and $12,000,000 for the Canadian section. The contemplated highway would extend from Seattle, Washington, to Fairbanks, Alaska. Commissions have been appointed by the Canadian and United States governments to consider and confer on the problem.

The route proposed for the highway follows the existing road from Seattle up the Fraser and Nechako river valleys in British Columbia to Hazelton; thence north to the headwaters of the Yukon River; thence down the Yukon Valley through Whitehorse and Dawson to Fairbanks, Alaska. It is estimated that the proposed highway will be 2,256 miles in length from Seattle to Fairbanks; of this 1,073 miles of existing road may be utilized.

Railroads. There are only two railroads operating in Alaska of interest to the general shipping or traveling public: the Alaska Railroad (main line, Seward to Fairbanks); and the White Pass and Yukon, which starts at Skagway and traverses 20.4 miles of Alaska territory en route to Whitehorse, Yukon Territory. The Copper River and Northwestern Railroad was closed in 1938 from Cordova to Chitina, although it was expected that tourist trains would be operated from Chitina to Kennicott. The Alaska Railroad, with 470.3 miles of main line, is thus the only railroad effectively ministering to the commercial transportation needs of a territory one-fifth the size of continental United States. No new construction in the immediate future is anticipated.

Under the Act authorizing the Alaska Railroad, town sites have been located, mineral resources investigated, agriculture promoted, tourist trade developed, a hotel and a hospital maintained, public telegraph and telephone lines as well as other public utilities erected by the Alaska Railroad. It also operates river boats on the Yukon, downstream from Nenana to Marshall and upstream from Nenana to Dawson. During the maritime strike of the winter of 1936-7 it operated coastwise vessels.

Both freight and passenger traffic on the railroad are greater in summer than in winter: in summer the arrival of steamers from Seattle and from Alaska Peninsula points is more frequent, and industrial activity along the Alaska Railroad more pronounced. During the winter months, boat service on the Yukon is suspended and passenger and freight schedules on the railroad are reduced to conform to the volume of business and the less frequent arrivals of connecting steamers at the Seward terminus.

The Alaska Railroad has operated without any sustained interruption since its completion in 1923. Deficits during the early years of operation have been reduced so that a small operating profit has been possible.

US MAIL 6708
US MAIL 399
TO BILL ERSKINE
F. LOPINTO

8. COMMUNICATION

RADIO AND RADIO TELEPHONE. The Alaska Communications System, the name of which was changed in 1936 from the Washington-Alaska Military Cable and Telegraph System, handles most of the telegraphic communication in Alaska, both governmental and commercial. Its traffic is about two-thirds commercial and one-third government. Only about three percent is of a strictly military nature. It operates no wire lines. The physical plant comprises the headquarters and control radio station in Seattle, and a network of twenty-one stations within the Territory. Communication to any points in Alaska other than these twenty-one stations is afforded through facilities licensed by the Federal Communications Commission to members of the public or the government of the Territory. Both message and money transfer services are offered. Long distance radio-telephone service is available solely between Juneau, Alaska, and Seattle, Washington, at which place connection is made to the wire network of the American Telephone and Telegraph system, and through that system to most of the telephones in the world.

At the time of establishment of the Federal Radio Commission (predecessor of the Federal Communications Commission) in 1927, very little study had been made of the private communication systems existing within Alaska. At that time radio in the Territory was not general. Any reasonable request for authority to install radio facilities was granted. It quickly developed that this policy, if continued in force, would lead to chaos, and an arrangement was reached with the Signal Corps of the United States Army for coordination of private communication facilities in Alaska with those operated by the Signal Corps. It was also agreed that stations desired for purely private use would not be authorized, and each person wishing to install and operate one in the Territory should be required to accept for transmission any traffic submitted by the public. This plan has operated very successfully, and at the present time there are 471 non-governmental stations of various classes, licensed by the present Federal Communications Commission. In order that these may be inspected from time to time, the Commission has a representative in Alaska with offices at Juneau.

The Navy originally built a number of radio stations in Alaska both to serve the fleet and to provide commercial communication where none was available. With the exception of the station at Dutch Harbor and the two radio direction-finder stations at Soapstone Point and Cape Hinchinbrook, all these have been closed or turned over to the Army or, in the case of St. Paul Island, to the Bureau of Fisheries.

The Federal Communications Commission, operating under the Communications Act of 1934, and the Alaska Aeronautics and Communication Commission, operating under an act adopted by the Alaska Legislature during its session in the spring of 1937, have jurisdiction over various phases of operation of radio stations by private individuals, corporations, and the Alaska territorial government.

OVERLAND TELEGRAPH AND TELEPHONE. The Alaska Railroad operates 501 miles of telephone and telegraph lines. They are strung on a one-pole line and are used both for commercial purposes and for company business. The telephone lines of the railroad are available for long-distance calls between towns and points on its line, and service is handled through the telephone exchanges operated by the cities, for which the cities receive 25 percent of the total charges. Calls between points on the railroad that do not pass through a city exchange are handled by railroad employees. They send and receive commercial telegrams between rail-line points and the exchange point with the Alaska Communications System at Seward, Anchorage, and Fairbanks, for which established tolls are collected.

For several years before Alaska was purchased from Russia, the Western Union Telegraph Company had been negotiating with the telegraph department of Russia for the joint construction of a line from Europe to the United States by way of the Bering Straits. An act was passed and approved by President Lincoln on July 1, 1864, "to encourage and facilitate telegraphic communications between the eastern and western continents." This act embodied a grant to Perry MacDonald Collins, a director of the Western Union Telegraph Company and a citizen of the United States, and included the right to construct telegraph lines to the boundaries of British America. This right was predicated on similar privileges granted to Collins by Russia and Great Britain to construct telegraph lines through their respective territories "from the mouth of the Amoor River in Asiatic Russia, by way of Bering Straits and along the Pacific Coast to the northern boundaries of the United States." Work was started in 1866, much of the material was on the ground, and during the year many miles of poles were erected in the territory which is now Alaska. This enterprise was never completed, and for a period of thirty-four years activity in Alaska with respect to electrical communication apparently ceased.

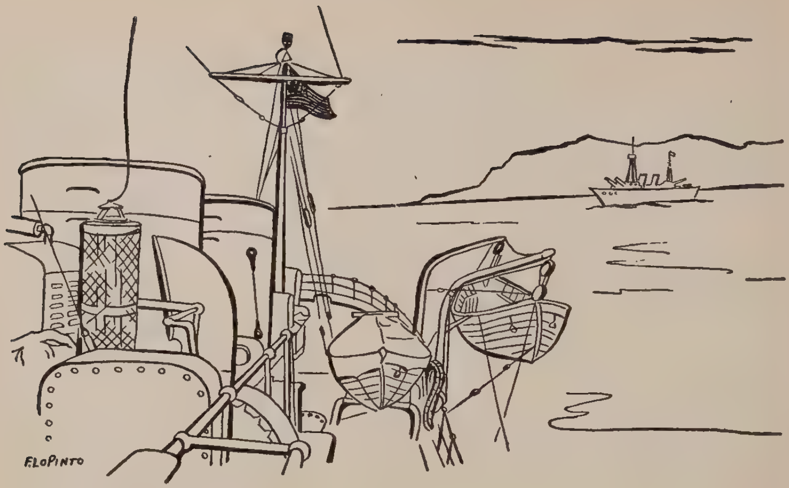
The Washington-Alaska Military Cable and Telegraph System was authorized by act of Congress, May 26, 1900, for the purpose of connecting the United States Army headquarters at St. Michael by military telegraph and cable lines with other military stations in Alaska. The system was operated by the War Department under the direction of the chief signal officer of the army. This communication system, as first established, consisted of land telegraph lines between important points. Subsequently, these land telegraph lines were augmented with short lengths of submarine cable, and in 1904 the installation of a submarine cable afforded direct communication between the United States and Alaska. The cable was operated from that time until 1931, when it was supplanted by a network of radio stations for communication to and from the Territory. During this period the land telegraph lines were gradually abandoned and supplanted by the radio telephone and radio telegraph. Today this network of radio stations represents the principal means of communication for the territory of Alaska.

MAIL. All mails for Alaska are dispatched from Seattle, Washington. During the summer season all classes of mail are carried. During the winter season (October 1 to May 1), on account of difficulty of inland transportation, mail for Alaska, except for post offices on the southern coast and those supplied by railroads, is limited. Preference is given to letters in their usual and ordinary form, postal cards, newspapers, and a limited class of merchandise. About 100 of the 199 post offices in Alaska have this restricted service. At best, this service is slow as compared with that afforded the mail elsewhere in the United States.

During the winter season, service on about eighteen routes is by airplane under "star route" authorization. These include the two trunk-line routes from Fairbanks to Nome and from Fairbanks to Bethel. During the summer season, the major portion of the mails is brought by boat.

During the period in which electrical communication was being developed, the Post Office Department undertook to handle mail. This was the first way of communication in the Territory. On July 23, 1867, shortly after the purchase of Alaska by the United States, a post office was established at Sitka. On July 31, 1867, the postmaster at San Francisco, California, was authorized to arrange for special mail service not to exceed once a week to Sitka. The first trip under this order was made prior to December 28, 1867, by the steamer *John L. Stevens*. Communications during the first year were very limited, the records of the Post Office Department showing that but $54.90 was received by the post office at Sitka from the sale of postage stamps. With military posts at Kodiak, Fort Wrangell, and Fort Tongass, post offices were established at those points prior to 1870.

Facilities for the transmission of mail increased as Alaska was settled and developed. In 1937 the number of post offices was 199, and the gross receipts were $117,389. Mail transportation in Alaska, on account of climatic conditions and rugged territory, has been confined principally to overland "star route" transportation and power boat services. "Star route" service is the carrying of the mails on overland routes on which no particular means of transportation is specified. Railroad service has aided materially in the transmission of the mails between Seward and Fairbanks. During the season of navigation, power boats have been used as the principal means of transportation, and after the navigation season, service has been performed by "star route" carriers overland. Dog sleds operating under the most adverse conditions have been used from the beginning for this type of service. Planes are now being used on eighteen of these "star routes," with a vast saving in time.



9. NATIONAL DEFENSE

THE TINY AIRPORT of Fairbanks, runways 400 feet by 3,000 ft. and 400 by 6,100 ft., is a few hours away from the Polar Sea which some hardy prophets call the Mediterranean of a future civilization. It faces, across that sea, the Scandinavian countries and the Central European powers. On its right stretches the broken chain of large and small islands that make up the northern coast of Canada. Ahead and on its left stretches the USSR, whose coast extends almost 160° of longitude, taking up almost half this new northern world. At its back lie the Hawaiian Islands, the Philippines, Japan, and Asia.

Fairbanks lies midway on the great circle route around the world. It is about 24 hours' direct flight over the Pole from London, Paris, Berlin, and Moscow. Or, by the great circle route that allows for refueling and repairs, it is about a day and a half in flying time from Central Europe, whether by way of Yakutsk, Omsk, and Moscow, or by way of Edmonton, Canada, New York, and the North Atlantic. New York and Yokohama are about the same distance from Fairbanks—some 18 hours' fast flight.

Navigation along the coasts of the Polar Sea is not confined to the air. By stationing weather observers along almost the whole of its northern coast, and by observing the movements of the ice-floes once thought to block all ports within the Arctic Circle, except for a few days in the summer, and by using ice-breakers, the USSR has partly opened this new sea to year-round navigation. Ports are being developed, and industrial towns of 10,000 population are being built inland from the Siberian coast.

Fortunately, the countries whose coasts abut the Polar Sea—Canada, Greenland, Iceland, Norway, the USSR—have no shortage of raw materials, no population pressures, and no serious trade rivalries. There is no reason, therefore, even in the present turmoil that grips Europe, why the development of the Polar Mediterranean countries should not proceed peacefully.

Alaska's front door opens on Europe, its back door on Asia. This back door is guarded by the chain of Aleutian Islands that enclose the Bering Sea, the coasts of which are rich in fish, fur, and gold. In the event of Asiatic expansion northward, a joint defense of this sea by Siberia and the United States could no doubt be made effective.

These considerations, coupled with the fact that the policy of the United States does not include the maintenance of large forces for local defense in time of peace, are no doubt among the reasons why the War Department has asked in recent years for no especial appropriations for the defense of Alaska, except one for the establishment of a temporary military air base to obtain experimental data that would be helpful in the employment of military aviation in Alaska in case of war. Similarly, although a bill to authorize an appropriation of $100,000,000 for naval facilities in Alaska came before the House in 1937, the Navy Department recommended that the amount be reduced to one-tenth of this sum, or $10,000,000.

The present army garrison of Alaska, which is attached to the Ninth Corps Area, with headquarters at San Francisco, consists of about 12 officers and 286 enlisted men (as of June 30, 1937). This garrison is stationed at Chilkoot Barracks, near Skagway. In addition to this garrison, a total of 228 officers, enlisted men, and civilians—94 of whom are at Seattle—of the Army Signal Corps operate the Alaska Communications System. Members of the Army Corps of Engineers maintain and improve rivers and harbors for navigation and flood control, administer the laws, including the issuing of permits, for structures and operations affecting the navigable waters of the Territory, and make surveys and examine waterways in order to prepare projects for their improvement.

Vast deposits of coal and petroleum, great expanses of forests, and an enormous wealth of minerals make local defense industries possible, although these are as yet undeveloped. In addition, agricultural developments in the regions of Cook Inlet, the Tanana Valley, and Matanuska Valley might prove useful in time of war.

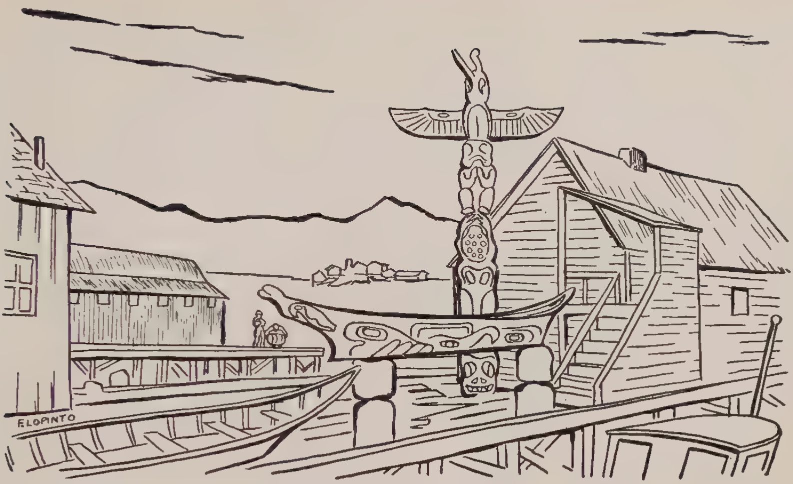
The headquarters of the 13th Naval district, within which Alaska lies, is at Seattle. If necessary, Alaska may eventually be organized as a separate naval district. The Navy Department maintains opposite Sitka on 200-acre Japonski Island a seaplane station at which are based a small tender and a squadron of twelve patrol planes. The complement of the station is about 31 officers and 185 enlisted men. Mass flights of as many as forty planes from Seattle to Japonski have been successfully made. In addition to Japonski, the Navy Department maintains a radio station at Dutch Harbor, Unalaska, and radio direction-finder stations at Soapstone Point, Cross Sound, and at Cape Hinchinbrook, Prince William Sound. These radio establishments are part of the Naval Communication Service on the Pacific Coast for the operations of the fleet. The Navy Department plans to establish a seaplane station at Kodiak, and to develop Unalaska. All three of these stations will be capable of protecting minor naval forces and making repairs on them, as well as affording facilities for seaplanes.

Besides its active stations, the Navy Department maintains nearly thirty million acres of Naval Reserve. Over 28,000,000 acres are included in the vast area of "Petroleum Reserve No. 4" that stretches across mile after mile of tundra in the Icy Cape region. Other extensive naval reservations are Cold Bay-Dolgoi Island (933,600 acres), Wide Bay (177,920 acres), and Unalaska (64,640 acres). The Navy may well retain existing naval reservations for the use of its forces in time of war, and establish such additional reservations as may be found necessary upon further study of the problem of defense. In addition to participating in fleet exercises and training cruises, the Navy Department in Alaska sends each year a naval cargo ship to Dutch Harbor and the Pribilof Islands to transport supplies and baggage for personnel of the Bureau of Fisheries, Bureau of Indian Affairs, and the Navy Department. This vessel brings back from the Pribilofs the annual take of seal skins, certain by-products, and passengers and their effects. The Hydrographic Office, under the Navy

Department, has surveyed some areas in the Aleutian Islands. The War and Navy departments cooperate with other Federal agencies in mapping and charting, in developing civil aviation and mineral resources, in roadbuilding, controlling alien fishing boats and fishermen, keeping off alien poachers of Alaska resources, and generally in developing the economic and commercial aspects of the Territory.

PART II

THE LAST FRONTIER



1. THE INSIDE PASSAGE AND SOUTHEASTERN ALASKA

Metlakatla—Ketchikan—Wrangell—Kasaan National Monument —Petersburg—Admiralty Island—Juneau—Sitka.

SEATTLE TO 54° 40′ BY THE INSIDE PASSAGE

THE STEEP STREETS of Seattle seem not far distant from Alaska. Nearly every clothing store on First Avenue claims to be *the* Alaska outfitter. Chunks of glittering galena, questionable nuggets, and bottles of black sand, flecked with yellow, reinforce WE BUY GOLD signs. "Alaska widows" are occasionally seen sauntering along First Avenue from bar to bar with their "brothers-in-law." In the leather chairs of hotel lobbies sit returned Alaskans—those from the Nome area favoring Frye Hotel; those from the Interior, the Savoy or the New Washington; miners and prospectors, the Northern, the Stevens, or the Atwood; the more prosperous, the Olympic; and that rare bird, the Alaskan with a wife and children, the Claremont Apartments. In Pioneer Square looms a giant totem pole carved by an Alaska Indian. A whaling company, a halibut exchange, a fishing-fleet base, a Coast Guard base, the home office of the Alaska Communications System, a United States Assay Office, shops selling Alaska curios, a zoo containing Alaska bears, piers loaded with millions of pounds of canned and frozen fish, libraries of Alaskana, the office of *The Alaska Weekly*—these are a few of the evidences of how closely Alaska impinges on the life of Seattle's citizens. While Alaska depends on Seattle for much of its clothing, foodstuffs, alcohol, machinery, and manufactured goods, purchasing as much as $43,000,000 worth of goods annually, Seattle also benefits by its nearness to the northern Territory through the annual handling of approximately $65,000,000 worth of Alaska products. Most important to the visitor to Alaska is the fact that in Seattle, almost at the exact center of the city's waterfront, are the docks where he embarks for Alaska.

On Alaskan Way, named by a city-wide competition in 1936, is the point of departure for the Inside Passage. A combined freight-and-passenger vessel eases into the wharf, shorelines are made fast, and passengers descend the gangplank—Alaska business men, traveling salesmen, miners, prospectors, fishermen, teachers, government officials, tourists, according to the time of year. From the steerage emerges a group of men returning broke from Eldorado. Slingloads of miscellaneous cargo are swung to the dock: whale oil from Akutan and Port Hobron, crates of canned salmon from Bristol Bay. With the care of hospital attendants wheeling a broken body, longshoremen trundle out the fuselage of a plane—a casualty of the North. Awaiting shipment are goods stacked in orderly tiers labeled with strange names: Ketchikan, Anchorage, Nushagak, Platinum, Nome. Longshoremen endanger shins with bull jitneys and push-pull jitneys. "Fix that lazy guy!" somebody yells suddenly—not an injunction to greater speed, but a warning to the winch driver on deck that a guy line is twisted.

After taking on cargo at other docks the vessel returns to its home pier and the gangplank is thrust out. A farmer from the dust bowl is heading North with his wife and four children. A chechakho in laced boots, fancy riding breeches, and logger shirt tries to look like a sourdough; beside him the genuine article, in well-pressed city clothes, spits meditatively. Into the steerage crowd cannery men, pale from their winter in the city. Last of all, laden with hand baggage, travel folders, and cameras, come a portion of the 35,000 "round-trippers" who visit Alaska every summer.

From the ship's deck can be seen the forty-two-story Smith Tower, built in 1914, and marking the maturity of a city that reached its majority under the influence of the Alaska gold rushes. The business district of the Queen City rises sharply in successive gradients. Looking up one of these steep canyons during the five o'clock rush hour a returning sourdough asked a classic question, "Now who in hell's made a strike up that godforsaken gulch?" If no gold strikes were actually made in Seattle, Alaska rushes had a tremendous effect on the city, which had a period of mushroom growth beginning with the day the SS. *Portland* landed in Seattle and word went through the streets that she was carrying "a ton of gold." There are many points of interest connected with Alaska in the Seattle of today, and the visitor to Alaska should arrange his schedule so as to spend some time visiting them.

SEATTLE FUR EXCHANGE (auctions monthly; principal sales December-April; open 9–6 weekdays), 1009 Western Ave. A private company dealing in wholesale raw furs only and supplying worldwide markets, this exchange handles more than 20 percent of the Alaska fur output. The furs are auctioned in lots, at the rate of about 150 to 200 lots per hour; from 1500 to 3000 lots are sold at each auction. The bidders use a sign language to make known their offers.

THE ALASKA COMMUNICATIONS SYSTEM (not open to the public) is housed in the Federal Office Building, First Ave., between Marion and Madison Sts.

MACK'S TOTEM CURIOSITY SHOP (open 9–6 weekdays), 71 Marion St., Viaduct, offers a wide collection of Alaska curios, ivory, fossils, and Indian handicraft.

ALASKAN WAY, sweeping along the shores of Elliott Bay from E. Marginal Way on the South to Bay St. on the North, was first opened in 1936 after an expenditure of $1,586,000. The Alaska-Yukon Pioneers are attempting to raise funds to cast a bronze statue, *The Sourdough,* from a mold done by Victor Alonzo Lewis, and place it on Alaskan Way. The model for this statue was "Skagway Bill" Fonda, a Seattle resident over 80 years of age in 1938, who was among the first to head north in gold-rush days. "There were twenty-three of us streetcar conductors who quit in one day when the SS. *Portland* landed in Seattle with a ton of gold," recalls Skagway Bill. "I took my grubsack on my back, and tied it in the middle. When I came to the string I knew it was time to start back. I built the first log cabin in Skagway, the first bridge over the river, and laid out the townsite."

SEATTLE HALIBUT EXCHANGE (open 10–12 weekdays, April-November for bidding), Pier 8, foot of Spring St. Here, in an unpainted loft, are the Fishing Vessel Owners' Association and the Seattle Halibut Exchange, handling some forty-eight million pounds of halibut yearly in an office not much larger than a kitchenette apartment. There is no fuss about the matter. A "board boy," standing in a small pen, quietly chalks up the offerings as they are reported; big-boned Scandinavians smoking strong cigars, who know fish to the last fin, make the bids. Between 175 and 200 halibut trawlers make their home at Pier 8 during the season, nosing through the blue sound to range in the principal halibut areas of Alaska.

YE OLD CURIOSITY SHOP (open 9–6 weekdays), Colman Dock, foot of Marion St. In 1899, J. E. ("Daddy") Stanley brought to Seattle a wagonload of curios from Denver. A smiling man in a black skullcap (in his eighties in 1938), the proprietor was awarded a medal by the United States for his ethnological Eskimo collection displayed at the Alaska-Yukon-Pacific Exposition in 1909. A comprehensive display of Alaska masks is maintained. Stanley makes many shipments of Alaska Indian and Eskimo wares to museums and private collectors.

ALASKA STEAMSHIP COMPANY (open 8:30–5:30 weekdays), Pier 2, foot of Yesler Way, is equipped to supply information on a wide variety of subjects to tourists.

THE TOTEM POLE, Pioneer Square, 1st Ave. at Yesler Way. Brought from Alaska in 1897, this fine example of totem carving was set up in Pioneer Square to commemorate Seattle's part in the development of Alaska. It was damaged by fire in 1938, but careful repairing has left no sign of the injury suffered then. The pole is the work of a Tongas Indian, and the figures, reading from the top down, are Raven, Shaman, Frog, Bear, Eagle, Whale, Eagle. These are the family crests of a chief and his wife before whose house it stood. What a given pole means, in any fuller detail, can be told only by the man who carved it or ordered it carved. These Indian pictorial stories are richly allusive and as intertwined as the *Arabian Nights*. The maker of a pole often needs several days to "read" or explain it fully to the stranger.

FROZEN FISH MUSEUM (open 9–12, 1–4 weekdays), Spokane St. and E. Marginal Way. Part of the port of Seattle's Spokane St. Terminal, this museum has more than 2,000 rare and unusual specimens of fish which by freezing retain their natural color and appearance. The storerooms for frozen commercial fish are also of interest.

CHAMBER OF COMMERCE (open 9–5 weekdays), 215 Columbia St., offers travel and statistical information, has current Alaska newspapers on file, and possesses a small collection of Alaska minerals.

SEATTLE PUBLIC LIBRARY (open 9–9 weekdays, 2–9 Sundays), 4th Ave. between Spring and Madison Sts., has an excellent collection of books relating to Alaska.

OLD UNITED STATES ASSAY OFFICE (now a private residence, not open to the public), 617 9th Ave., between James and Cherry sts., was opened for business on July 16, 1898, during the height of the Klondike gold rush. It received on the average a million dollars' worth of gold dust each month. It was closed on December 31, 1914, after having handled a total of 455.3 tons of gold from Alaska and Yukon Territory valued at $227,539,656. The new assay office is at 815 Airport Way.

HUDSON'S BAY FUR COMPANY MUSEUM (open 9:30–5:30 weekdays; free), 1516 5th Ave., has a full exhibit of Indian and Eskimo curios from Alaska and the Northwest, including totems, handicraft products, articles of wear, and hunting weapons.

SEATTLE POST-INTELLIGENCER (open 9–5 daily), 6th Ave. at Pine St., has a newspaper library open to research workers but not to the general public.

ALASKA WEEKLY (open 9–5 weekdays), 2100 5th Ave., has a file of pamphlets and papers on Alaska. Its own files, from 1923 to date, are available for research.

ALASKA-YUKON PIONEERS (business meeting 1st Fri. in month; social meeting 4th Fri.), 1923½ 1st Ave.

LADIES OF THE GOLDEN NORTH (meeting 3rd Fri. in month), 1923½ 1st Ave. Besides occasional dances and social events, these organizations sponsor the *Sourdough Stampede* held annually in some city of the Northwest.

SEATTLE TIMES (open 9–5 weekdays), Fairview Ave. N. and John St., has an information department open for research, and an excellent newspaper library on Alaska and the Pacific Coast.

SEATTLE COAST GUARD BASE (open 9–6 daily), 1515 Fairview Ave. Coast Guard vessels from this base cover the Alaska coast and the Bering Sea as far north as Point Barrow. In addition, the Coast Guard inspects all commercial and pleasure craft departing from Seattle for Alaska.

CHARLES HUBBELL COLLECTION (private), 1623 39th Ave., contains 2,000 items relative to Alaska, including several rare Russian manuscripts and maps.

CLARENCE ANDREWS COLLECTION (private), 3627 Ashworth Ave., has a number of rare books relating to Alaska, many of which are in Russian.

UNIVERSITY OF WASHINGTON (open 8–5 weekdays), between 15th St. N.E. and Montlake Blvd. and E. 45th St. and Lake Washington Canal. Many Alaska miners take their problems to the well-equipped School of Mines.

THE MUSEUM (open 1-5 Sun.-Fri.; 9-5 Sat.) displays specimens of clothing, tools, art, and ceremonial objects from Alaska, for the most part limited to the Indians of southeastern Alaska. Birds, animals, minerals, and prehistoric remains from Alaska are located in their respective sections of the museum, but objects pertaining to Alaska are not segregated.

THE LIBRARY (open 8-10 Mon.-Fri.; 8-5 Sat.) contains 5,000 bound volumes relating to the Pacific Northwest and Alaska, as well as important manuscripts and rare newspapers. There is also a large collection of photostats of records of Alaska taken by Dr. Frank A. Golder from the Russian archives in Leningrad and Moscow. A number of buildings erected for the Alaska-Yukon-Pacific Exposition are still in use by the University.

WOODLAND PARK (open summer, 8 to dusk; winter, 8–5) bounded by N. 50th and N. 59th Sts., E. Greenlake Way and Phinney Ave. This park, under the direction of Dr. Gus Knudson, contains a zoo, housing what is probably the best collection of live Alaska bears in existence. The Alaska brown bear was given to the park in 1904. She had been a performing bear in Seward, Alaska, but one day broke away and wrecked a saloon. The citizens of Seward named her Carrie Nation and exiled her to Seattle. An Alaska eagle, an arctic owl, and a white-fronted goose are also inhabitants of the park.

FISHING FLEET HARBOR, 15th Ave. W., below the Ballard Bridge on Salmon Bay, is the winter home of the 220 vessels of the fishing, cannery, and Northland Trading fleet. The vessels, including 40 trollers, 66 halibut, and many general fishing and trading boats, moor here during the slack period while seamen overhaul the boats and prepare fishing gear for the coming season.

AMERICAN PACIFIC WHALING COMPANY, Bellevue, across Lake Washington via the Medina Ferry (dock at end of Yesler Way cable car; from Medina to Bellevue by a shuttle bus line) is the base of the Alaska whaling fleet of six steam whalers. About 120 men leave Seattle in May or June for Alaska whaling stations, in operating seasons.

Leaving the dull red rocks along Alaskan Way, the steamer backs into crescent-shaped Elliott Bay. To the right looms residential Queen Anne Hill. Rounding West Point, marked by a lighthouse, the ship heads directly up Puget Sound. Bainbridge Island, hardly distinguished from the mainland, is on the left, and beyond it and the forested mainland are the tumbled rocks of the Olympic Mountains. To the right, Fort Lawton's guns point unseen behind the forest. Shilsole Bay indents the shoreline, opening to Government Locks and Lake Washington Ship Canal. Finally the northwest corner of Seattle breaks off at a high bluff, the long white chain of the Cascade Mountains stretch across the eastern horizon, and the nonstop voyage along the Inside Passage, 757 miles from Seattle to Ketchikan, begins.

The boat is never out of sight of land. The bewildering chain of islands, from which drifts an almost overpowering smell of spruce, baffles the passenger, who at any given moment is unable to foretell what way the boat will pick through the constantly shifting outline of mountain, island, and shore. Layers of mist lie on the hillsides like geologic strata, or are caught in spruce branches like wool left by celestial sheep, or form grotesque arches and doorways as if to lure the boat through false channels.

Fogs are frequent along the Inside Passage, and formerly, vessels navigated entirely by dead reckoning, checking their position with blasts of the whistle. Pilots became expert in judging their exact whereabouts by the quality of the echo (which has a different sound according to whether it is reflected from a pine-covered island, from a mountain, or from open water) and by the time between the blast of the whistle and the echo. Modern navigation relies to a certain extent on radio beacons, but these cannot be trusted absolutely, as they have a variation of 5 degrees, and are sometimes deflected by the narrow channel. In thick weather pilots still rely on their knowledge of the channels, in which it is frequently necessary to make a turn at right angles. It is safer to steam steadily ahead in a fog, as on the basis of a consistent speed, with the necessary checks for wind or tide, the navigator knows exactly where he is. He simply puts the vessel on one course for the right number of minutes, then changes his course, keeping to the middle of the channel by blowing his whistle and listening to the echo.

PUGET SOUND, named after Peter Puget, one of Vancouver's lieutenants, is left through ADMIRALTY INLET, first explored in the summer of 1790 by Alfarez Manuel Quimper who named it Señor de Santa Rosa. Admiralty Inlet opens into JUAN DE FUCA STRAIT, which was named in 1788 for a Greek mariner employed by Spain, Apostolos Valerianos, known as Juan de Fuca, who in 1592 claimed to have found, somewhere north of 47°, the "straits of Anian." Early cartographers believed such a strait set off Asia from America, and offered a northwest passage from the Atlantic to the Pacific. Much of the Pacific Coast was explored in attempts to find such a passage, which was ultimately navigated from the east by Roald Amundsen in 1906.

In a search for this passage, Sir Martin Frobisher, sailing from England in 1576, sighted the southern shore of Greenland and entered Frobisher's Bay, supposing the land on his right to be Asia and that on his left, America. He was accompanied on the last two of his three voyages by George Beste, whose *True Discourse* was published in London in 1578. Frobisher, in the words of Beste, "Being persuaded of a new and nearer passage to Cataya (Cathay) than by Capo d'buona Speranza (Cape of Good Hope), which the Portugalles yearly use . . . began first with himselfe to devise, and then with his friends to conferre, and layde a playne platte unto them, that that voyage was not only possible by the north-west, but also, as he could prove, easie to bee performed. . . . Wherefore, beeying furnished wyth the forsayde to barkes and one small pinnesse of tenne tunne burthen, havying therein victuals and other necessaries for twelve months provision, he departed uppon the sayde voyage from Blackwall the fifteenth of June, Anno Domini 1576. . . .

"The worthye captayne, notwithstanding these discomfortes, although his mast was sprung, and his toppe mast blowen overboorde wyth extreame foule weather, continued hys course towardes the northweast, knowing that the sea at length must needs have an endying, and that some lande should have a beginning that way; and determined, therefore, at the least, to bryng true proofe what lande and sea the same myght bee, so farre to the northweastwardes, beyonde anye man that hathe heretofore discovered. . . .

"Being ashore upon the toppe of a hill, he perceived a number of small things fleeting in the sea afarre off, whyche hee supposed to be porposes or seales, or some kinde of strange fishe; but coming nearer he discovered them to be men in small boates made of leather. . . .

"The captaine, notwithstanding, desirous to bring some token from thence of his being there, was greatly discontented that he had not before apprehended some of them. And therefore to deceive the deceivers he wrought a prettie pollicie, for knowing well how they greatly delighted in our toyes, and specially in belles, he rang a pretie lowbel, making wise that he would give him the same that would come and fetch it. And bycause they would not come within his daunger for feare, he flung one bell unto them, which of purpose he threw short that it might fal into the sea and be lost. And to make them more greedie of the matter he rang a lowder bell, so that in the ende one of them came neare the ship side to receive the bell, which, when he thought to take at the captaine's hand he was thereby taken hemself; for the captaine being redily provided, let the bel fal and cought the man fast, and plucked him with maine force boate and al into his bark out of the sea. Whereupon, when he founde himself in captivitie, for very choller and disdain, he bit his tong in twayne within his mouth: notwithstanding, he died not thereof, but lived until he came in Englande, and then he died of colde which he had taken at sea." Thus Eskimo and Englishman met for the first time.

Whidbey Island, with striking banks of gray stone, was named by Vancouver after one of his officers who circumnavigated it. It was first settled in 1848, when Thomas W. Glasgow paddled to the island, built a cabin, and sowed wheat and potatoes. He was driven off the island by Indians, but other settlers managed to establish permanent homes by 1852.

Vancouver Island, British Columbia, the largest island on the west coast of North America, is from 40 to 80 miles wide and 285 miles long. It is linked by a submerged mountain range with the Queen Charlotte Islands. Like the rest of this country it is densely wooded, and has large coal deposits, some copper and iron. Farming is carried on in the valleys of the interior and parts of the southern coast. Fishing is of major importance.

Admiral de Fonte had given a circumstantial account of sailing through the Straits of Anian in 1640. On his third voyage Captain James Cook sought this passage, and although he failed, discovered Nootka, on Vancouver Island, where Spaniards later built a fort, commanded by Bodega y Quadra in 1792. The Fraser River gold rush of 1858 made Nootka briefly a boom town.

The island was named for George Vancouver (1757-1798), British naval officer, who commanded an exploring expedition to the northwest coast of America. Shipping at the age of thirteen as able seaman aboard Captain Cook's *Resolution,* he rose to be midshipman on the *Discovery* and finally to be Cook's right-hand man. In 1791 he was made master of the armed sloop *Discovery,* 330 tons, and the cranky little armed tender *Chatham,* 135 tons, to head an expedition to Nootka Sound "to receive back in form the territory which the Spaniards had seized, and also to make an accurate survey of the coast northward from the 30th degree of north latitude." On April 1, 1791, Vancouver sailed from Falmouth. In 1792, after exploring parts of Australia, New Zealand, and the Hawaiian Islands, he investigated the strait of San Juan de Fuca, discovered the Gulf of Georgia, and sailed away to circle the large island which now bears his name. On his second trip north in April, 1793, Vancouver sought the northwest passage much farther to the north. Returning from Cook Inlet by way of Cross Sound, and thence south through the Inside Passage, homesick and physically ailing, the explorer claimed the whole territory for England, naming it New Norfolk. Today Alaska maps no longer bear this name, but Berners Bay reminds the world of Vancouver's mother, and Norfolk folk and Norfolk towns are remembered in such designations as Port Snettisham, Port Houghton, Halkhorn Bay, Point Coke, Adtley, Windham, Hobart, Walpole. Vancouver returned to England in 1795, and for three years worked upon his journal of discovery, published posthumously by his brother John in 1798.

FRASER RIVER, near the boundary between Canada and the State of Washington, is navigable for large boats to North Westminster, 15 miles from its mouth. The Spanish navigator Valdes discovered the river in 1792, and Alexander Mackenzie navigated it the following year, believing it to be the Columbia. Simon Fraser, the son of a noted American Tory, became a partner in the Northwest Fur Trading Company at the age of twenty-six, and in 1805 was sent to build fur-trading posts west of the Rockies. Three years later he descended the river, and, discovering it was not the Columbia after all, named it for himself.

VANCOUVER, British Columbia (p.o., 246,593pop.), about 15 miles north of the international boundary and about 150 miles north of Seattle, the terminus of the Canadian Pacific and Canadian National Railway systems, is at one of the three angles of the "scenic triangle," the other angles of which are at Prince Rupert, near the Alaska boundary, and at Jasper National Park in the province of Alberta. This is a departure point for Alaska-bound Canadian vessels (Canadian National Railway and Canadian Pacific Railway S.S. companies), but American passenger steamers do not stop here. The Greater Vancouver Tourist Association, 596 West Georgia Street, will supply free maps, guides, and general information to tourists.

Vessels usually anchor at the mouth of SEYMOUR NARROWS, 1½ miles long and less than a half mile wide, and wait for slack tide, which lasts about twenty minutes. Many boats have been wrecked on Ripple Rock. The Indians believe the Narrows to be the home of an evil spirit, Yakulta, who overturns canoes and devours their occupants. Beyond Seymour Narrows is JOHNSTONE STRAIT, a channel nearly sixty miles long with high mountains on either side.

ALBERT BAY (p.o.), on the right hand side about midway in Johnstone Strait, has a single street of frame buildings inhabited largely by Cheslakee Indians. It contains many fine totems. There is an

Indian burial ground on the south point of the bay, decorated with streamers and flags and grave-fences. The Indians still use dugout canoes, hollowed with fire and adze. Airplanes enroute from Seattle to Ketchikan often stop here to refuel.

Queen Charlotte Sound connects the Inside Passage with the Pacific, and for about fifty miles the steamer is in open water. Here for a few hours passengers may feel for the first time the motion usual on an ocean voyage. Soon the steamer passes Fitzhugh Sound and again furrows what appears to be endless narrow rivers flowing between mountains timbered to the water's edge.

On the left is passed Bella Bella (p.o.), an old Hudson's Bay Company post. An hour later Millbank Sound, another open stretch of about an hour's duration, is reached, and the steamer enters Tolmie Channel, in many places less than a mile wide. Boat Bluff, in Tolmie Channel, is a favorite crossing for wild animals, and bear and deer may often be seen swimming close to the steamer. The channel here is lined with thousands of waterfalls tumbling over the wooded cliffs, and behind them are unnamed mountains, from three to five thousand feet high. On the right is passed the village of Swanson Bay (p.o.).

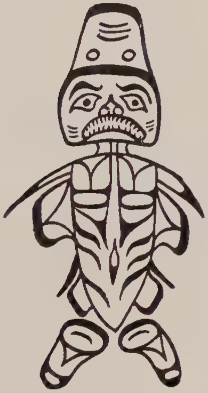
Grenville Channel, named by Vancouver after Lord Grenville, secretary of state, who gave him his commission for the Northwest Expedition, is perhaps the most magnificent channel of the Inside Passage.

At Chatham Sound the open Pacific again stretches through Dixon Entrance to the inner channel. Warm air borne by the Japan Current thrusts against the cold mountain air, and heavy banks of fog lie solidly on the water and are caught in the branches of the spruce forest. Here ferns and bushes grow as in a hothouse.

The Skeena River is paralleled by the Canadian National Railway. The Native name means "river of trouble," as many Indians were killed by poisonous shell fish near its mouth. The Tsimshian Indians consider the country around the Skeena as the cradle of the human race, and many of their legends are told with this river as a setting.

On the right is Prince Rupert, B.C. (p.o., 6,500 pop. est. 1938), first settled in 1907 on an island near the mouth of the Skeena River,

History



In 1740, a year before Bering sailed on his great voyage to Alaska, when the Pacific north of 47° was an unknown world, Jonathan Swift published a map of North America which was a curiously accurate forecast of facts which were not to be established for fifty years. In 1752 the house of De Lisle, with full knowledge of Bering's voyages (one of the De Lisle brothers had been astronomer on the expedition) published a map of the northern Pacific which is strikingly inaccurate. The cartographers believed the accounts of the Admiral de Fonte and Juan de Fuca were more trustworthy than Bering's reckonings—or the adventures of Lemuel Gulliver. There were sea captains in 1752 who knew the Pacific better than the De Lisle brothers, but this map remained in vogue until near the end of the century, probably because it fed the hope for a northwest passage or short cut to the Indies.

During that time, Russian fur traders, without the help of maps, made their way along the islands to the mainland, subjugating the native tribes and almost exterminating many species of sea animals. In 1867 Alaska passed into the possession of the United States; but it remained largely unexplored territory—a land of Indians and fur animals—until the discovery of gold at the end of the nineteenth century.

Gold drew prospectors by the tens of thousands. When these did not find a fortune in the known fields they moved on into the uncharted wilderness. It was the prospector who discovered the great interior of Alaska and blazed its trails. After him came well equipped expeditions which mapped the Territory. In a short time a communications system had been established and heavy machinery was being put to work. Twentieth century methods of mass production were introduced. In 1938 more than thirty-six thousand summer visitors were discovering that Alaska was the ideal vacation land—a spectacularly beautiful country of glaciers and snow-capped mountains, big-game hunting and sport fishing, that was also America with American speech, American food, American ways.

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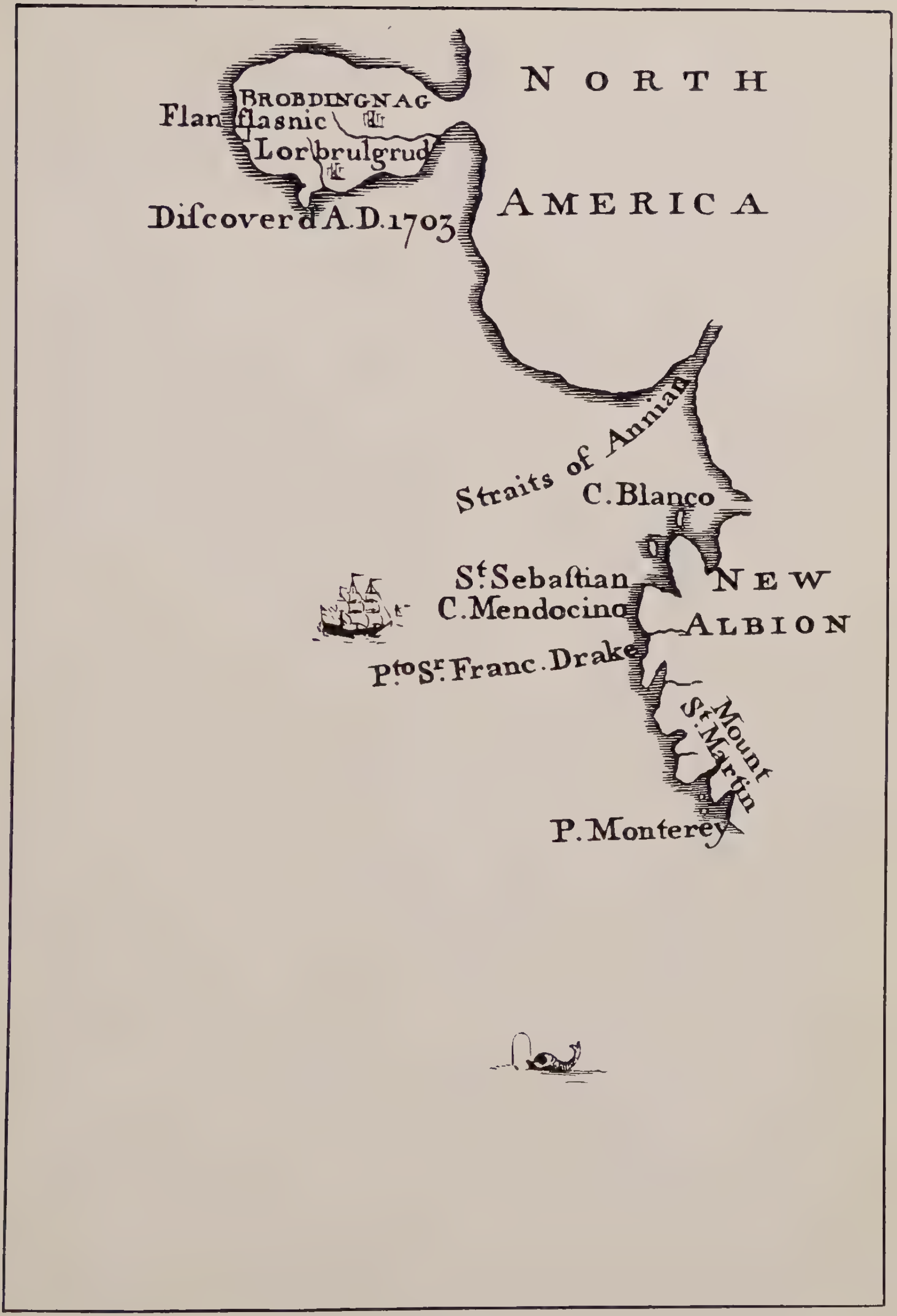
NORTH
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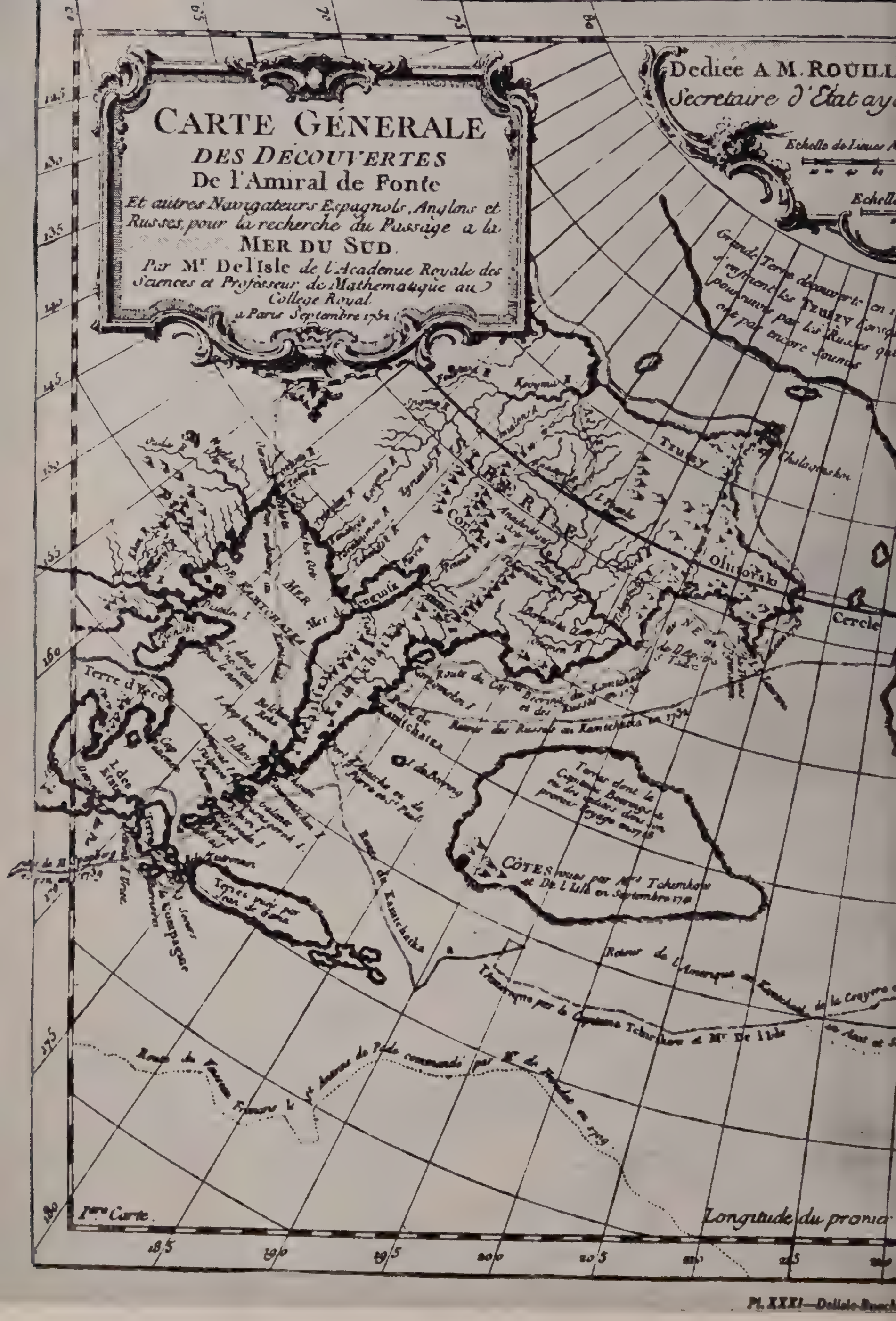
BROBDINGNAG
Flanflasnic
Lorbrulgrud
Diſcoverd A.D.1703
Straits of Annian
C. Blanco
Sᵗ. Sebaſtian
C. Mendocino
NEW
ALBION
Pᵗᵒ Sʳ. Franc. Drake
Mount Sᵗ. Martin
P. Monterey

West Coast of North America
by Jonathan Swift, 1740


CARTE GENERALE
DES DECOUVERTES
De l'Amiral de Fonte
Et autres Navigateurs Espagnols, Anglois et Russes, pour la recherche du Passage a la
MER DU SUD.
Par Mr. De l'Isle de l'Academie Royale des Sciences et Professeur de Mathematique au College Royal
a Paris Septembre 1752
Dediée A M. ROUILL
Secretaire d'Etat ay
SIBERIE
Tzuczy
Olutorski
Cercle
Mer de Pengina
Terre d'Yeco
Port de Kamtchatka
CÔTES vues par Mrs Tchirikow et De l'Isle en Septembre 1741
Terres vues par Jean de Gama
Compagnie
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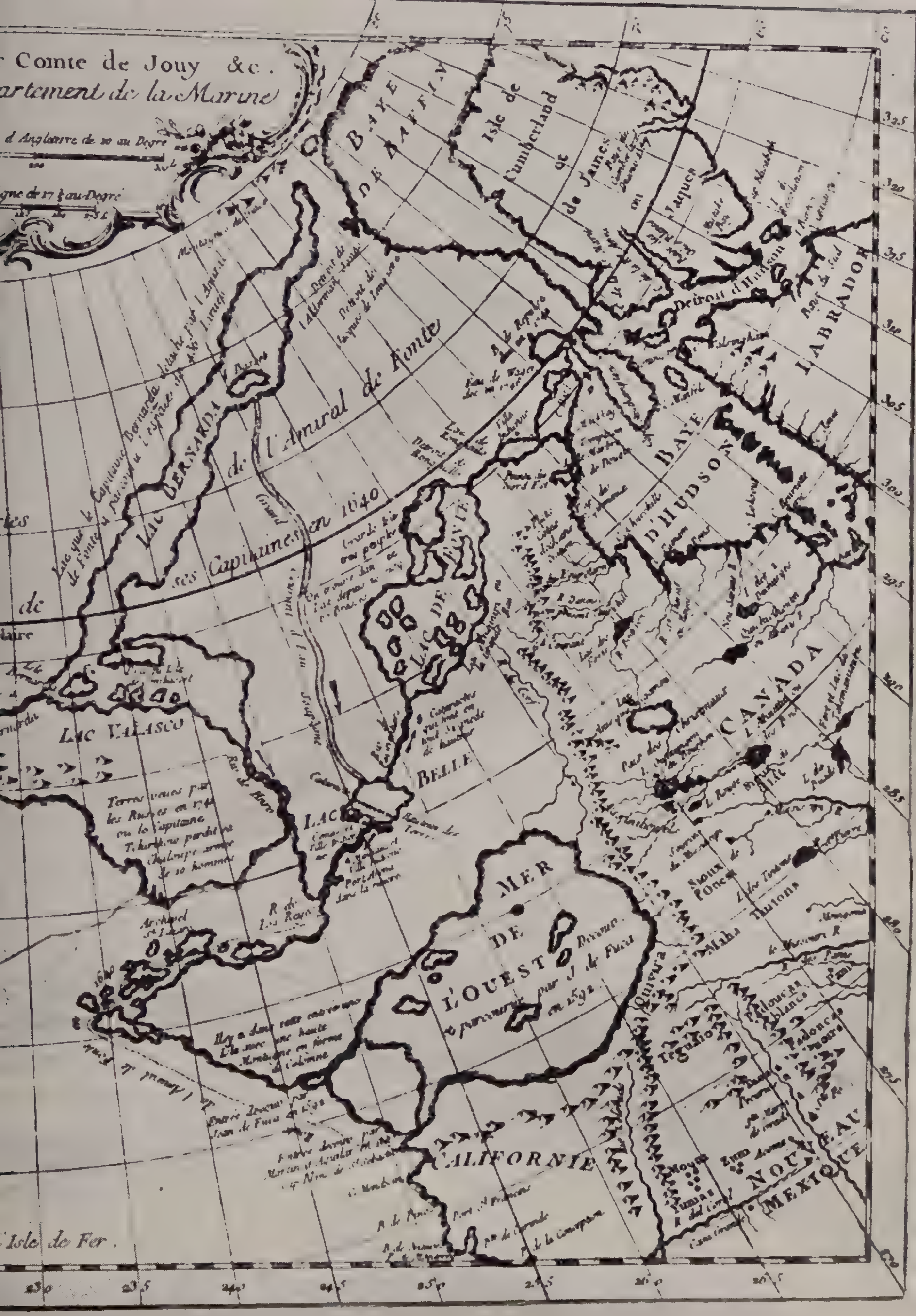
Longitude du premi
Pl. XXXI—Delisle-Buach

The De Lisle Map of the North Pacific, 1758


Comte de Jouy &c.
artement de la Marine
d'Angleterre de 20 au Degré
gne de 17 ½ au Degré
BAYE DE BAFFIN
Isle de Cumberland
de James
Deitroit d'Hudson
LABRADOR
BAYE D'HUDSON
Lac BERNARDA
de l'Amiral de Fonte
ses Capitaines en 1640
de
LAC DE FONTE
BELLE
LAC
Lac VALASCO
Terres vues par les Russes en 1741 où le Capitaine Tchirikow perdit ses Chaloupes armées de 10 hommes
MER DE L'OUEST Decouverte par J. de Fuca en 1592
CANADA
Sioux de l'Ouest
Quivira
Teguaio
Padoucas
Moqui
NOUVEAU MEXIQUE
CALIFORNIE
Entrée decouverte par Juan de Fuca en 1592
Entrée decouverte par Martin d'Aguilar en 1603
l'Isle de Fer.
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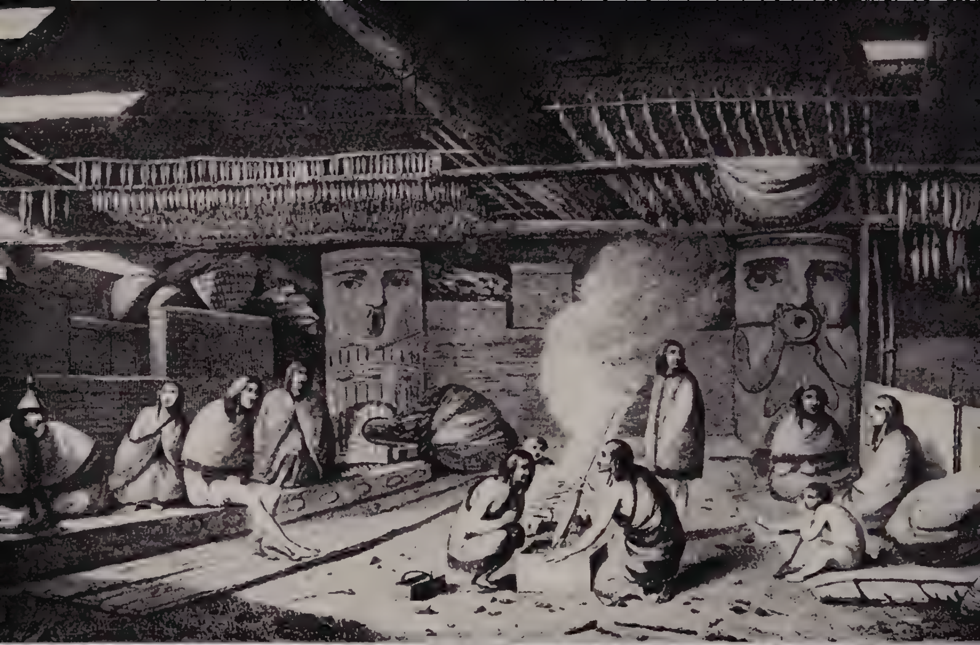
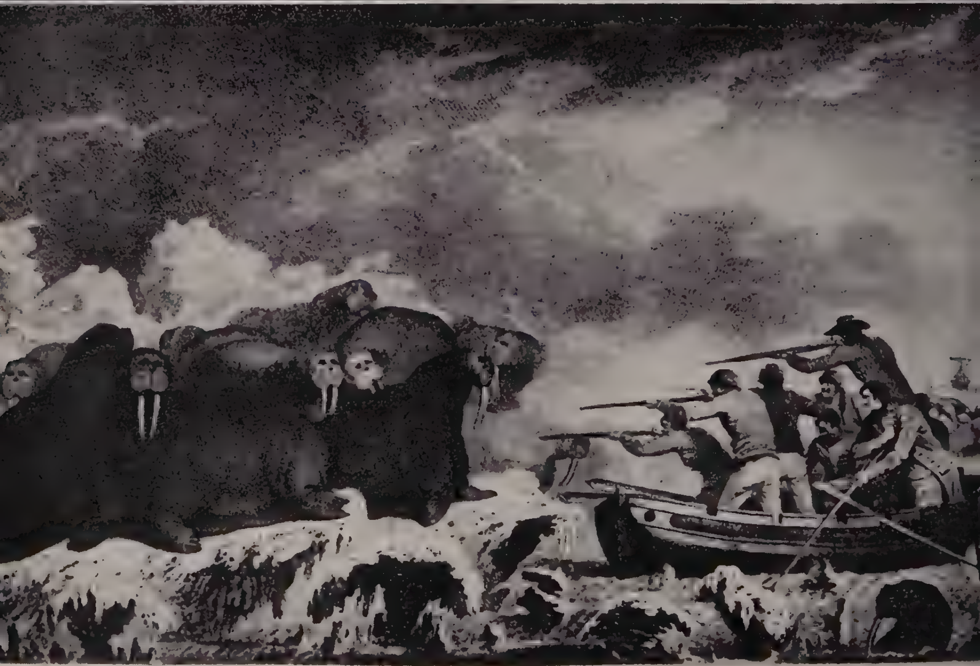
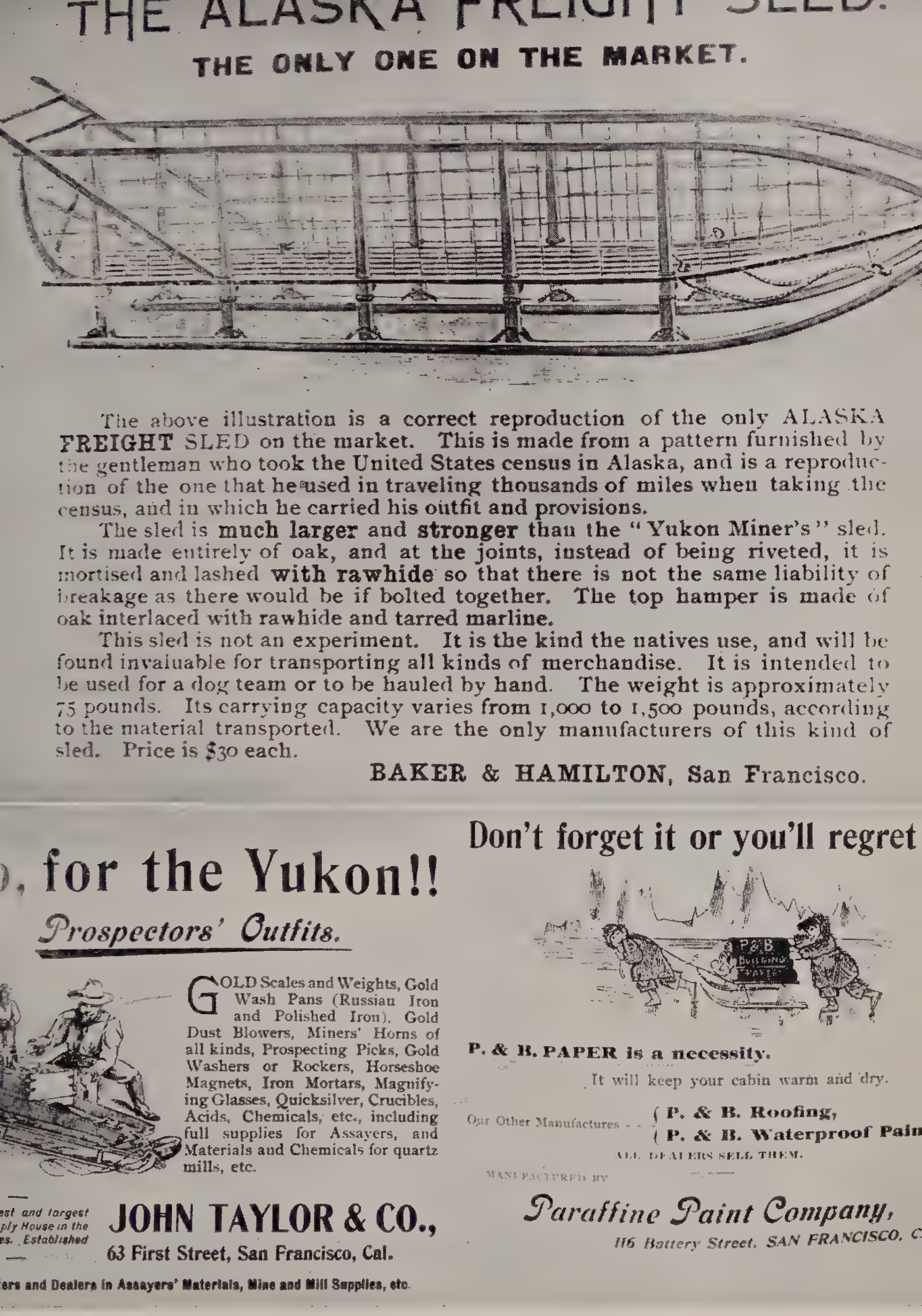
als of 1752) _ No. 571.





ABOVE: *Interior on Nootka Sound*
BELOW: *Hunting Walruses*


P&B
BUILDING
PAPER

THE ALASKA FREIGHT SLED.

THE ONLY ONE ON THE MARKET.

The above illustration is a correct reproduction of the only ALASKA **FREIGHT** SLED on the market. This is made from a pattern furnished by the gentleman who took the United States census in Alaska, and is a reproduction of the one that he used in traveling thousands of miles when taking the census, and in which he carried his outfit and provisions.

The sled is **much larger** and **stronger** than the "Yukon Miner's" sled. It is made entirely of oak, and at the joints, instead of being riveted, it is mortised and lashed **with rawhide** so that there is not the same liability of breakage as there would be if bolted together. The top hamper is made of oak interlaced with rawhide and tarred marline.

This sled is not an experiment. It is the kind the natives use, and will be found invaluable for transporting all kinds of merchandise. It is intended to be used for a dog team or to be hauled by hand. The weight is approximately 75 pounds. Its carrying capacity varies from 1,000 to 1,500 pounds, according to the material transported. We are the only manufacturers of this kind of sled. Price is $30 each.

BAKER & HAMILTON, San Francisco.

, for the Yukon!!

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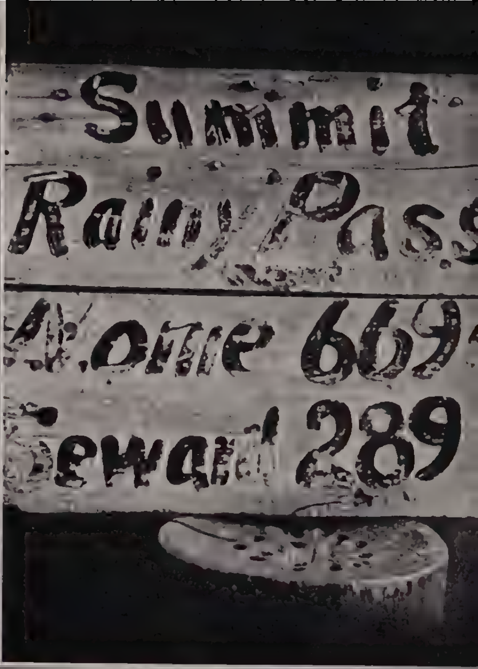
116 Battery Street, SAN FRANCISCO, C

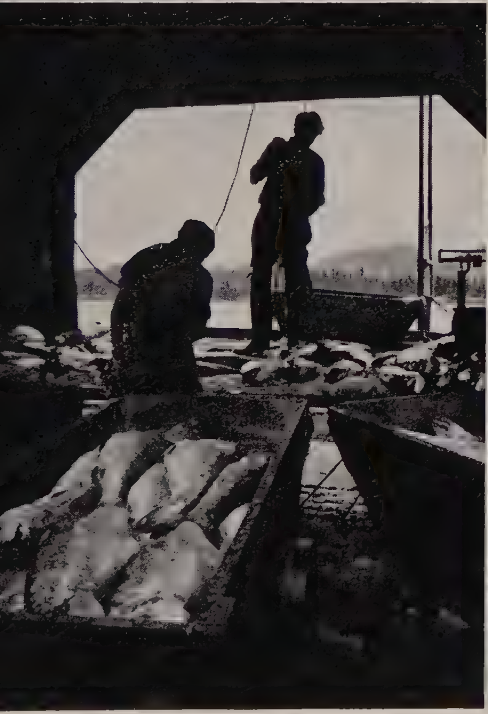
Advertisements, 1898


Summit
Rainy Pas
Nome 669
eward 289

ABOVE: *The Prospector*

ABOVE: *Signboard*

BELOW: *Mountain Climbing Expedition*



ABOVE: *Telephone Line*
BELOW: *Weighing Salmon*

ABOVE: *Modern Gold-Dredge*
BELOW: *Sorting Gold Ore*

ABOVE: *Tourist Steamer* ABOVE: *Lawing Lodge (Kenai Peninsula)*
BELOW: *Golf Course at Anchorage*

and named after the first governor of Hudson's Bay Company. It is the western terminus of the Canadian National Railway, and is at the northernmost angle of the "scenic triangle." Shipbuilding and fishing are the principal industries. North of Prince Rupert is OLD METLAKATLA, from which Father Duncan's Tsimshians moved to modern Metlakatla, Alaska.

HAZELTON, B.C. (p.o., 1,300 pop. est. 1938) is above Prince Rupert on the Skeena River. It is served by the Canadian National Railway, and was in 1938 the furthest point yet reached by the International Highway. Hazelton was settled in 1873 and became a Hudson's Bay Company post in 1880. It was named for the hazelnut bushes that grow abundantly in the neighborhood. The chief industries are mining, farming, and pole cutting for telegraph companies. Three miles east of the townsite, spanning Bulkley River, is an old Indian bridge built of wire stolen from the Overland Telegraph (San Francisco to London) Company lines. ANYOX, B.C. (p.o., 150 pop. est. 1938) is a mining camp in the copper district south of Stewart, established in 1914, but closed in 1939.

PORTLAND CANAL was named by Vancouver in 1793. The term "canal" is commonly used in these waters to designate a natural channel. Portland Canal marks the boundary between British Columbia and Alaska. The United States claimed, under its treaty with Russia, a boundary line running up Portland Canal to the 56th parallel of north latitude, thence to follow the summit of the coast range to its intersection with the 141st meridian. In the absence of a definite mountain range near the coast, the line was to be not more than ten marine leagues distant from tidewater. Canada claimed that the line should cut across all inlets and fiords to afford her right of free access to the sea by rivers and inlets lying chiefly in Canadian territory. The question became acute after the opening of the Klondike, and was submitted to a tribunal of three Americans, two Canadians, and one Englishman, which met in London in 1903. The tribunal's vote was four to two for the United States, the Lord Chief Justice of England, Lord Alverstone, casting his vote with the Americans. The Canadian members refused to sign the decision.

Writing an account of the hardships encountered surveying the boundary line, the chief of the United States party, later to become governor of Alaska, oddly forecast present-day aerial mapping. "On the maps," wrote Thomas Riggs, Jr., in 1909, "the boundary is shown all along by nice little dotted lines, but the work of putting this line on the ground is still in progress, and both American and Canadian surveyors are putting forth their best efforts to establish a boundary which will stand the test of time; so that when a hundred years hence the engineer of the period throws in his equilibrium clutch, turns on the gravity and air-current absorber, and brings his huge dirigible to a stop above some one of our stations, he may look through his improved surveying instruments along the vista from the Arctic to Mt. St. Elias and pronounce the line laid out by the old-timers straight and good." Although our modern planes have neither "equilibrium clutch" nor "gravity absorber," their "improved surveying instruments"—the aerial camera—can be used only because such pioneers as Thomas Riggs fixed accurate ground points that can be used to key photographic maps.

SOUTHEASTERN ALASKA

At the head of Portland Canal, about 150 miles northeast of Ketchikan, is the town of HYDER (p.o., 254pop., mostly Native), reached by boat from Ketchikan. Just across the international boundary line from Stewart, B.C., Hyder was named in honor of a Canadian scientist in 1910. The Big Missouri and Premier mines are near here on Canadian territory. The country is unrivaled for its scenic beauty, with 30 miles of continuous glacier lying among mountains which have been little explored. An extraordinary story of tunneling under these glaciers is told by miners who claim to have been on the track of some high-grade electrum—an alloy containing about two ounces of silver to one of gold, assaying $14,000 to the ton.

"A gasoline-burning boiler was set up on a sled. The boiler was only about five feet high, so we could drag it under the ice after us. By carrying the outlet pipes through the stack we super-heated the steam. Our cutter was made of three-eighth-inch pipes in three-foot lengths, T-shaped, with a long line of small holes through the top of the T for the escape of the steam.

"The top of the T was about three feet long. When we held it against the ice the steam melted a three-foot crack in the ice and we thus cut out six blocks in the face of the tunnel, each three feet square. To cut out the back of the block we turned the pipe so that the steam would play down. All we had to do was to push the block on to a little sled. Gravity carried the sled out to the mouth of the tunnel. Then, when a rope stopped the sled with a jerk, the cake of ice would bounce off and go tumbling down the mountainside.

"At the mouth of the tunnel, for some distance, the light would filter through the ice and into the hole, and the ice would take on beautiful shades of blue and green. Later only the ultraviolet rays found their way through and eventually we worked in the dark, only carbide lamps supplying us with light.

"The floor of the glacier dipped and rose, and occasionally we'd encounter pools of water. During warmer periods we'd hear torrents of water which came from surface melting, rushing under the ice. The temperature of the tunnel remained at just a degree above the freezing point the year around, so it was not as cold as one might think. Scientists explain this as due to pressure of the ice and friction created as it creeps over the rock.

"The ice cap was moving all the time, of course, but the movement was not visible to us. A duckboard which we used to cross a crevasse and which fell into it in July, 1930, was recovered when it emerged, intact, at the face of the ice, 110 feet distant, in July, 1936. At another time the glacier gave up the body of a mountain goat, with hide and horns intact, very little worse for the years it must have been in cold storage.

"At places we'd come to little open places under the ice, especially where the ice flow was from over the top of a bluff. Here there would be a room, much like that you would find under the curtain of a waterfall. Occasionally the bottom of the glacier would be lifted clear off the floor so one could crawl under the ice for a hundred feet or more. Under the glacier we'd have an ominous feeling of danger, especially if we had to pick away enough ice to make room to lie down. We'd think of all those thousands of tons of ice above us. The knowledge that, if the ice cap should settle ever so little, we would be pinned under it and crushed, often made us quiver. By picking at the tunnel face with our pick, we'd relieve that terrific pressure ever so little and the ice would crack with a singing sound much like the song of a bird. It would send chills down our spine for fear that the glacier above us would give way. Whenever the ice would sing like that we'd say we had 'hit a birdie.'

"We worked in this manner for four seasons, until the spring of

1933. I've got the location marked by triangulation from several points on the solid rock beside the glacier, and I'm getting ready to go in with another outfit for further development.

"Of course, I don't know how much of the rich stuff there is there, but even if there's only a few thousand pounds, it will be worth while. Then I suppose they'll be calling me a lucky fool."

METLAKATLA (p.o., 466pop.) is a cooperative Indian village established in 1887 on Annette Island about 15 miles south of Ketchikan. Through steamers do not ordinarily stop here, but the town is readily accessible by launch from Ketchikan.

Prior to 1887 these Indians lived at Metlakatla, B.C., with their pastor William Duncan, a Scottish lay preacher sent from London to the Indians of British Columbia by a missionary society under the auspices of the Church of England. He arrived at Fort Simpson, B.C., on October 2, 1857. He began immediately to study the language of the Tsimshian Indians and was soon preaching in their own tongue. Within a short period after his arrival he left the fort to live among the Indians and established a model village, called Metlakatla. Under his guidance the Indians built themselves comfortable homes, developed a trade with neighboring tribes and with the whites, and established a store and sawmill.

For a period of twenty years the settlement prospered. Controversies then arose between Duncan and the authorities of the Established Church and Duncan was replaced by Bishop Ridley. In a short time the Bishop was asking for a man-of-war to protect him from his flock. In 1887 some four hundred Indians, principally of the Tsimshian tribe, left British Columbia and settled on Annette Island with their beloved pastor. Duncan had visited the United States and urged influential citizens and government officials to secure Congressional legislation setting aside Annette Island as a reservation. This was done by the act of March 4, 1891. In addition to their land reservation, the Metlakatlans have today exclusive fishing rights in all waters within 3,000 feet of the shores of the island. They also have, and use, the privilege of fishing in other areas throughout the Territory in competition with Natives who have no similar exclusive rights.

Duncan began anew the efforts which had made his colony in British Columbia so remarkable a success. Streets were laid out; lots set aside for occupancy of individual Indians; comfortable homes erected; a church constructed—the largest in Alaska; a sawmill established; a salmon cannery built and put into operation; and a school established for the Indian children.

Duncan remained at Metlakatla until his death in 1918. During the last few years of his life the operation of the school and salmon cannery were taken over by the Federal government. The colony today has one of the most developed cooperatives of any Indian group in North America.

Metlakatla lives by fishing and fish canning, the products of its sawmill, boat building, and retail trade.

The present Metlakatla salmon cannery has been in operation since 1917. It was built from the royalties received from the fish caught in traps operating in the reserved waters around Annette Island. The cannery has been improved into a modern three-line cannery. The cannery buildings, machinery (with the exception of some which is leased) and other equipment belong to the people of the reserve in common. Since 1917, the cannery has been leased by the Metlakatla Council, through the secretary of the interior, for periods of five years each.

During a good salmon-canning season (1936) there were twenty-one Metlakatla seine boats, fishing for the local cannery. From eighty to a hundred men operated these boats, catching fish worth $67,200. Metlakatlans engage in trolling for king salmon—a conservative estimate of the net returns to the town for the year's operation would be $85,000.

The sawmill, with a capacity of about 10,000 board feet of lumber per day, is the common property of the village and is under the supervision of the Town Council. Any townsman who needs lumber can go out on the island and haul in his own logs and, by paying a small sum to the men operating the mill, can have his lumber sawed and planed.

In the fall of 1927 the town completed a hydroelectric plant which furnishes electricity for light and power to everyone in the village without charge. The water system is also owned by the town, and every inhabitant in the village is furnished free water.

Boats are built at Metlakatla, from the round-bottom 14- to 16-foot trolling boats to seine boats up to 50 feet in length. The community hall, a structure 70 by 120 feet, was designed by the mayor, David Leask, and built by the villagers, except for the arch of the stage, the chimney, and the furnace. It was completed and dedicated in December, 1931. A good part of the work was done by free labor; the rest of the labor and the materials was paid for out of the town's share of the cannery earnings. There are five Native-owned and profitably operated, general merchandise stores in the town.

KETCHIKAN (p.o., 4,800 pop. est. 1938), the first Alaska community usually visited by tourists, and the second largest town in Alaska, is a leading port and an important fishing center on the west coast of REVILLAGIGEDO ISLAND. The island is separated from the mainland by Behm Canal, and was named by Vancouver in 1793 after the Viceroy of Mexico, Revilla Gigedo.

The harbor is crowded with the masts of hundreds of fishing vessels that make their home port here. The town itself is built against DEER MOUNTAIN (3,000 alt.), and the neighboring hill, and is divided by a waterfall. Its buildings are largely of spruce or cedar. Many of the sidewalks are of heavy planking weathered to a soft silver, cleated on one side. A sunny July day here is like a July day in Maine or Minnesota—hot, clear sun, air with a hint of coolness, the smell of spruce. Front and back yards are full of flowers—delphiniums eight or nine feet high, handsome rock gardens, pansies big as saucers with bold eyes looking as if they were about to wink at the passer-by. This Alaska atmosphere was not enough for a Hollywood movie director when he made use of Ketchikan for local color in 1936. The director placed totem poles on the Main-Mission Street intersection, hung polar bear skins on the Coliseum Theater over salty kegs, draped fish netting over two gray skiffs in front of Ye Curio Shoppe, and moved such outstanding evidences of civilization as "No Parking" signs out of camera range.

Ketchikan is in the heart of the vast Tongass National Forest. The climate is mild, with an average annual temperature of 45°. Very little snow falls here, but the total yearly rainfall, if it descended all at once, would cover the town to a depth of about 12½ feet. Ketchikan has 24 miles of highway, not including city streets, and about 450 automobiles. Municipally owned utilities include telephone, electric light, and power and water systems. No gas is used, but electric ranges are found in nearly half the homes. There is a modern business section. The schools care for 930 pupils, and the high school is accredited to the principal universities. Churches in Ketchikan, include the Methodist-Episcopal, Episcopal, Catholic, Lutheran, Presbyterian, Christian Scientist, and Seventh Day Adventist; and there is a hospital operated by Catholic sisters. There is a large number of civic, fraternal, and labor organizations. Ketchikan is governed by a mayor and six councilmen, and has a volunteer fire department of thirty-five members. A Federal building, completed in 1938, houses many Federal agencies.

The town's Indian name, Kach Khanna, is supposed to mean "spread wings of prostrate eagle." During the gold rush of the 1890's Ketchikan was a supply point and center for miners; since then halibut and salmon fishing have been the major industries. Gold mining has again assumed importance in recent years.

From Ketchikan harbor, a protected anchorage with a stone breakwater 940 feet long completed in 1933 at a cost of $225,000, halibut vessels making Ketchikan their outfitting port catch twenty to thirty million of the forty-five million pounds of halibut that are landed annually on the Pacific Coast, selling most of the catch in southern ports. Halibut livers, yielding an oil high in Vitamin D content, are a valuable by-product. Trollers fish for king salmon and silver salmon; and some sable fish and other varieties of cod are caught. The nine canneries on the road running through Ketchikan and along Tongass Narrows pack annually from 300,000 to 500,000 forty-eight-can cases of salmon.

In 1865 the first salmon cannery was built on the Pacific coast, a very crude affair. The cans were made by hand and only a few dozen could be turned out in a day. These cans were of the old style with the ends soldered to the body of the cans. The fish were cleaned, cut into pieces, and put into the cans by hand. The cooking, sealing, and labeling processes were long ones, and the final product was far inferior to the delicious canned salmon of today.

Salmon canneries were operating in Alaska as early as 1878. All labor and supplies had to be shipped from the States, and the trip made by sailing vessel. From a month to six weeks were necessary to reach the fishing grounds. In 1879 two Alaska canneries packed 12,530 cases.

Great progress has been made in the methods used since the first salmon were packed on the Pacific Coast. Instead of transporting men and supplies to the canneries by sailing vessels, large steamships make regular trips to the farthest points in Alaska in a matter of days.

Cans are now manufactured by machinery and shipped in collapsible form; at the cannery they are rounded out, filled, and sealed by machinery. In 1936 a one-line cannery in Alaska, during continuous 19-hour operation, packed 3,700 cases, or an average of 138 cans per minute.

In addition to the salmon which is canned, millions of pounds of fish are frozen in Ketchikan each year—halibut, salmon, cod, for food, and herring for bait. The Ketchikan cold-storage plant may be visited on application to the office.

Published in Ketchikan are the monthly *Alaska Sportsman* (15 cents a copy, $1.50 a year), a well-edited and lavishly illustrated magazine containing articles of interest to the visitor as well as to the sportsman, the *Ketchikan-Alaska Chronicle* (daily, 5 cents, Saturday, 10 cents), and the *Alaska Fishing News* (bi-weekly, 5 cents).

At the falls of Ketchikan Creek from the latter part of July to October salmon may be seen climbing the fish ladder. An hour's walk along the boardwalk beside the old flume leads to City Park and to Ketchikan Lake, source of city water. Beyond the ball park is the Native School.

A new road developed by the Forest Service in cooperation with the CCC leads to WARD'S COVE, a picnicking and camping area for Ketchikan residents near two lakes. The cove was named for W. W. Waud of Portland, Oregon, who established a saltery here in 1883-4 and was drowned near by in 1892. There is some fishing in the lakes, but much better fishing is to be had at LAKE PERSEVERANCE (reached by trail from the Ward's Cove road). Chinese pheasants have been stocked by the Alaska Sportsmen's Association in the Ward's Cove area, and deer and bear are frequently seen. There is a ski course on the trail to Lake Perseverance. A rifle range is being constructed by the CCC in cooperation with the U.S. Coast Guard and the *Alaska Sportsman.*

Among the more interesting totem poles to be seen at Ketchikan are the Kyan totem outside Pioneers' Hall, the Johnson totem in Indiantown, six totems brought from neighboring villages to the baseball park, and a totem at the Native village of SAXMAN (112 pop.), two miles southeast of Ketchikan on the northeast shore of Tongass Narrows.

The word *totem* is derived from a Chippewa word, the root signifying "village." Among the Indians of the northwest the totem symbols were the possession of specific clans. One clan might have several symbols or crests. Any member of the clan, of sufficiently high rank, might use any of these at will. The possession of a totem or crest is usually accounted for by an encounter of a member of the clan with the animal of the crest, in which the animal probably assisted the man in some way. But crests might be acquired in other ways. Sometimes at a feast a host would honor a guest by giving him a crest of his own. Names were sometimes acquired in the same way. Once, at such a feast, not enough food was supplied to satisfy some of the guests; in retaliation they took three or four names from the house. Among the Tlingit Indians personal names were usually derived from the clan crest; Raven might be called "Silver Eyes," or Bear, "Shaggy." This practice was not universal and was not observed by the Haida.

The totem signs were largely heraldic but were also connected with the Native mythology. They were the Indian coats of arms, and were painted or engraved on the walls and posts of the communal houses, on canoes, on chests or boxes containing the winter supply of food, and on almost every article in daily use.

There were two principal types of totem poles: the house post, showing the crests of a house owner and his wife; and the grave post, or memorial column. The carver of an ordinary totem pole received for his work 100 to 250 blankets costing three dollars each. Some of the larger specimens cost one thousand dollars or more. The carving of a totem was a big undertaking. A perfect tree was selected and, after being hollowed out by fire, was drawn through the forest to the site where the actual carving was done. Many gifts were made to the artisans, and there was much feasting and dancing. The poles were shaped with the Native adze and simple carving tools, the latter made to cut toward the operator, not from him.

WACKER (p.o., 57pop.), a Native settlement 20 m. northeast of Ketchikan, on Revillagigedo Island, is a fishing village with a general store. LORING (40pop. est. 1938), 20 m. north of Ketchikan, grew up around a salmon cannery established in 1885 and abandoned in 1930. It is visited by trout fishers from Ketchikan. An automobile road from Ketchikan to Loring was under construction in 1938. There are several abandoned Native burial grounds in the vicinity.

Forty-five miles north of Ketchikan is BELL ISLAND (2,500alt.), named by Vancouver in 1793 for a member of his party. At the hot springs (on a cove reached by launch from Ketchikan) is a health resort, HEALTH SPRINGS, with furnished cottages, and a hotel containing a post office (BELL ISLAND) and a general store, all heated by hot water from the springs.

The property of the springs was taken up as a homestead in 1902 by George Roe, who erected a bathhouse and a number of cabins along a boardwalk extending to a landing place opposite the boat anchorage and developed the springs as a resort. Since 1924 the springs have been the property of Miss A. M. Herrington, the present manager.

The principal spring issues at the north edge of a small creek about 400 yards from and fifteen feet above high-tide limit in the narrow cove into which the creek empties.

The rock surface at the springs has been concreted into five basins, each about four feet deep, the largest being about three by ten feet in width and length. Observed temperatures of the water in the several basins range from 125° to 162°. The total flow of the five basins is about eight or ten gallons a minute. The water is high in mineral content, and of the sodium chloride type, though sulphate is also present in amount secondary only to the chloride. Cold water is also obtained from the springs by conducting it through grate-like pipes laid on the bottom of the cold-water creek, and leading it into a tank reservoir.

MYERS CHUCK (p.o., 50pop. est. 1938) is 80 miles northwest of Ketchikan on Clarence Strait. It is a fishing and mining village and was named for a prospector who found his food in these woods.

WRANGELL (p.o., 948pop.) curves in a crescent along Etolin Bay (now Wrangell Harbor) on the north side of Wrangell Island. It is about 8 miles south of the Stikine River and about 89 miles northwest of Ketchikan. In 1936 a mooring basin was dredged and a breakwater completed at a total cost of $81,000. The principal industries are lumbering and fur farming; and near by at Burnet Inlet, Santa Ana and Lake Bay are salmon-fishing centers. The population in 1938 was estimated at 700 white and 300 Native. There is a public school, a hospital, Catholic, Episcopal and Presbyterian churches, and a Salvation Army post. The *Wrangell Sentinel* (weekly, 15 cents) is published here.

Etolin Bay was surveyed in 1834 by Captain Zarembo and named by him after Captain Adolph Karlovich Etolin, who in 1841 became director of the Russian America Company. Wrangell Island was named for Vice-Admiral Baron Ferdinand Petrovich von Wrangell.

Wrangell at first appears to be a crude frontier town, with its single main street, lined with frame stores and dwellings, leading left uphill to the houses of the more prosperous white citizens, right downhill across dreary flats to the huddled wooden huts of the Indian village. But this town is less raw and new than it seems: it is haunted by the centuries-old tradition of the great and warlike Stickine Indians, one of the great Tlingit tribes, beside which the hundred-year history of white domination seems like an episode.

In 1834 the Russians built a fort here to resist the encroachments of Hudson's Bay Company traders and named it Redoubt St. Dionysius. In 1867 the United States established a military post at Fort Wrangell, which was abandoned in 1877. That year the Presbyterian church at Portland sent Mrs. Amanda McFarland to work among the Indians. She was joined the following summer by Dr. Samuel Hall Young, and a church of twenty-three members was established in August, 1879. The Presbyterians consider this the first Protestant church in Alaska.

Samuel Hall Young was born in 1847 and completed his theological training at Princeton in 1878. That year he was sent to Fort Wrangell to assist Mrs. McFarland. The following summer the naturalist John Muir made his headquarters with Dr. Young at Wrangell. Muir was born in Scotland in 1838 and came to the United States in 1849. He had explored large areas of western America, spending six years in the Yosemite Valley, contributing greatly to scientific knowledge of glaciers, and becoming one of the early champions of American conservation of natural resources. He traveled in Alaska during the summer of 1879 with Dr. Young, returning in 1880 to explore Glacier Bay. In 1881 and 1890 he traveled in the Arctic, and in 1897 in northwestern Canada. He was a member of the Harriman Expedition in 1899. Here, according to John Burroughs, he was the authority on glaciers, "and a thorough one—so thorough that he would not allow the rest of the party to have an opinion on the subject."

During the Klondike rush, Fort Wrangell was the outfitting center for miners heading up the Stikine River and using the difficult Teslin River and Pelly Lake route into the Yukon. The town consisted, in the words of Muir, of a "lawless draggle of wooden huts and houses built in crooked lines, wrangling around the boggy shore for a mile or so in the general form of the letter S."

Beyond the present Indian village is CHIEF SHAKES' COMMUNITY HOUSE (open during steamer hours; admission 25 cents; right from the steamer dock, following the waterfront past the sawmill) in which has been gathered a remarkable collection of utensils and art objects illustrating the social life of the Tlingits.

The community house was a winter, or permanent home. In summer the inmates scattered to different fishing and hunting grounds owned by the family. These were just as truly the private property of their owners as were the houses. No Indian thought of fishing or hunting on the grounds of another family.

Originally, when a community house was to be erected, a number of slaves, in proportion to the chief's wealth, were dropped into the holes dug to receive the posts, and then the posts were dropped upon the slaves. Samples of hair from these slaves were kept and fastened to dancing sticks and clan hats as a sign of the number sacrificed to do the chief honor. The Russians were able to persuade the Wrangell chiefs that an even greater mark of distinction would be to free a certain number of slaves instead of killing them on such occasions. From that time on, so long as slavery existed, it was the custom in Wrangell to free slaves at feasts.

The house posts were huge trunks of trees, often elaborately carved and painted with the family totem. Across these were laid long trees reaching the full length of the house. Cedar was the wood commonly used. Its soft fiber was most suited to carving and splitting with the primitive tools the Tlingits and Haidas used, and it is more resistant to decay than other Alaska woods.

Sometimes large totemic designs were painted on the rear wall inside the house. There were no windows. The door might be a large carved and painted affair, but the actual entrance was usually through a low doorway cut in the larger door through which one had to stoop. This was probably for protection. Around the walls ran an elevated platform. On three sides this formed the living quarters for the different units of the family. The back wall was usually reserved for the boxes which contained the treasures of the family, clan hats and ceremonial robes, and valuable relics of all kinds. In the center the ground was bare. Here was the place for the central fire, and in the roof directly over this was the smoke hole.

The house, comprising from fifty to a hundred persons, was the social unit of the Tlingits. Each house belonged to a clan and its members recognized a relation with all members of the clan. Eight to fifteen houses belonging to various clans made up a village. But the village was a unit only in case of attack. Then the house chiefs gathered together and elected one of their number, the war chief. This was often a fairly hereditary position, but only because that particular chief was best able to be a successful leader, trained for the position by his uncle.

The villages of a given district made up a "tribe." But the geographic classification was of more importance to the white man than to the Indian, who felt a family bond with all members of his clan wherever they might live. Thus thirteen houses made up the Tongas "tribe" at Tangac. Seven of these belonged to one Raven clan. Of the remaining six houses, four belonged to one Wolf clan and two to another.

Descent was reckoned through the mother. Children belonged to her clan and took her name. A man might give away his personal property as he pleased, but his natural heirs were not his own children but those of his sisters—his own mother's obvious descendants.

The inmates of a community house were men of one clan (brothers and nephews of the chief), and their wives and minor children belonged to other clans. The services and earnings of the men of the house were the property of the chief, but only as the representative of the house. The ceremonial robes, Chilkat blanket, dancing sticks, drums, shields, and canoes were family property and descended to the nephews with the family names. The question of which nephew should succeed to the chiefhood upon the death of a chief was always an important one. Not age, but worth was the controlling factor. Usually one of the nephews was so outstanding in character that he might be said to have been in training for the succession, and there would be no dispute. Differences arising out of the descent of the name, however, might result in a family division and the starting of a new community house.

Each clan belonged to one of two phratries, the Raven or the Wolf-Eagle. Marriage between persons of the same phratry was not allowed and was considered incestuous. The phratry distinction may have originated in a racial difference, but if so, this was soon lost through compulsory intermarriage and it survived as an economic cleavage among the Tlingits. The men of each phratry supported the women and children of their opposites. When a house had some important work to be done, such as burying a chief or erecting a pole, they "honored" their opposites by asking them to do this service. But having put another clan in the proud position of helpers, the family honor required that these should be paid liberally. This was done by a feast, or potlatch, at which a great deal of property was given away. To give property to a member of one's own phratry, as the Haida did, or to employ one's own people in important work, thereby paying a great deal less for it, was abhorrent to Tlingit notions of propriety.

Among the Tlingits all feasts were for the one purpose of honoring the dead, but feasting was not limited to funerals. Sometimes a man would dream that his dead uncle came to him and said he was hungry. Then the man would have to give a feast. Once a Wolf man complained: "Why don't you spirits work for food and blankets? You always want people to give them to you." Soon after that he died; but he came back to life and told his people what he had seen. He saw lots of people outside on the porches of their grave houses. One of them, a chief who had died long ago, spoke to him from his porch, saying: "Do you think the spirits are getting starved that you talk to us in that way? We are not getting starved." But whenever a man is going to give a feast for one who has died they feel very happy over it there.

For these feasts parties of guests might travel a long way to their hosts' house. Once, as such a party was beaching its canoes in the evening the hosts' men came down to help them, bringing their ceremonial hats and treasures. They left these with the visitors overnight to show that they knew "they would be safe with the guests." In the morning the host himself came down to the shore. "He had a bow and arrow in his hand and as he came down he kept making the motions of letting go an arrow. He did this because he was about to spend a great quantity of money and wished to show how brave he was."

During a feast the host stood at the end of the room and the guests were lined on opposite sides. Presumably they had been asked to the house because the chief was mourning, and during the feasting they tried to assuage his grief by songs and dances. The actions of each dancer were scrutinized with great care and any little mistake noted and remembered. The strain upon a dancer was consequently so great that when a fine dancer died soon after a feast it was said, "The peoples' looks have killed him."

After the feast had gone on for some time the guests invited the hosts to join them. Until then the hosts' clan did not eat. Finally it was time for them to take up the entertainment. The chief signaled his women to put on ceremonial ornaments, thereby showing his guests that his grief had passed and he was happy again.

At the culmination of a feast great quantities of food and blankets were distributed among the guests, sometimes as much as $6,000 worth. Often a child would be placed upon the goods that were to be given away. "This was to make him high caste, for it would be afterwards said of him that so many blankets were lost to show him."

The husband was responsible for the care of his wife and young children, but on his death they had no claim to his property. Accordingly it was the custom for the widow to become the wife of the next available male relative of her dead husband, who thereupon assumed the support of her and her children. Often this was a much younger man. If the woman had passed the age of childbearing, she might select a young partner for her young husband, keeping for herself merely the status of wife.

When a boy reached the age of about ten he was sent to his mother's brother for rearing. Until that time children were treated with an indulgence not approved of in Christian countries. It was the uncle's task to strengthen and toughen the child for maturity. Uncles would drive their nephews into the icy waters of the rivers in winter time. Food was never eaten early in the morning, and to this day the old men are scornful of the young ones who have to eat breakfast before they go fishing. Wood supplies were never laid in for the winter, because it was considered good training for the nephews to go to the woods in the depths of winter and cut the necessary amount each day.

A girl remained with her mother until marriage. When a marriage was to be arranged the boy's uncle went to the girl's mother and said, "I value the words I am going to speak at forty blankets. If you are willing, kindly accept them." If the mother agreed to the match she accepted the blankets, which were currency among the Tlingits. The boy was then admonished by his people. "You must get up early and look for your food or in time your wife will want to marry someone else and you will be ashamed." Such a calamity brought shame on both families, and so a mother preferred to marry her daughter to a man with hands "like an eagle's"—strong and rough from work.

The student of ethnology will find many traces of old Tlingit culture under the veneer of civilization of the present generation. The tourist will look in vain, however, for one picturesque aspect of the old life. There are no more community houses.

Tlingit marriage customs were described with more emotion than understanding by Dr. Young when he first came to Alaska. He appealed to the churches of America for funds to help him in his work "among a people where heathenism crushes out a mother's love and turns her heart to stone, where for a few blankets a mother will sell her own daughter."

Before Dr. Young arrived, Sheldon Jackson had complained about the community houses "where fifty or sixty men, women and children live huddled together, no decency, no modesty, no morality, and no sanitation possible." Wrangell Tlingits were taught to use single family dwellings by Mrs. Amanda McFarland, pioneer of Presbyterianism in Alaska. Arriving there in 1877, she found herself the only white woman with "a few converted but morally uninstructed Indians and a great many heathen about her," and set herself to draw up regulations for the community life, to the great annoyance of Chief Shakes. "I tried to convince him," she wrote, "that I had come up there to do him and his people good; and then read him the laws. He replied that he would like to know what I had to do with the laws, that I had been sent there to teach that school and nothing more. . . . He said he supposed that I thought that I was safe, but he would advise me to send for the soldiers to come back."

At this point a convert, Toyatte, spoke to the chief. He reminded him of his soul, and warned him that if he died as he was living he would certainly be lost. "Shakes replied that he did not care if he did go to hell-fire, that his people were all there. He then left the meeting. After he was gone the people all signed their names (or rather I wrote their names and they made their mark) to the rules I had written out. It was now five o'clock. The second day was gone, and we adjourned with the doxology."

Toyatte, who came to Mrs. McFarland's aid, was presumably one of the "converted but morally uninstructed." John Muir knew him as a guide and describes the circumstances of his death. A quarrel between Taku and Wrangell Indians had reached the point of war, and both sides began loading their guns. Dr. Young tried in vain to prevent the shooting. He found Toyatte among the warriors, and pleaded with him to remember his teaching and come away. Toyatte replied: "Mr. Young, I am not going to fight. You see I have no gun in my hand. But I cannot go inside the fort to a place of safety while my young men are exposed to the bullets of their enemies." So he charged, unarmed, and fell.

Early missionaries among the Tlingits often claimed that these people had "no moral sense." Anthropologists today tell us that "very well-defined moral standards did exist, to which a high caste person was especially expected to conform." In many respects these standards were closer to the Christian ideal than the accepted practice of Christian communities. But for the Tlingit, morality was limited to human relationships. He did not attribute a moral purpose to the universe as a whole.

Like most primitive people the Tlingits believed the earth was flat and the sky a solid vault. The stars were community house fires. The earth rested on a post in charge of Old Woman Underneath. She was fidgety and often made earthquakes. Near the sky lived the Thunder Bird. When he was hunting a whale he brought a thunderstorm. Lightning winked from his eyes, and the flap of his great wings made the thunder. On his back was a large lake that spilled water on the earth.

The Tlingit talked to inanimate objects, and certain places and mountains were always greeted when passed. All glaciers were given a friendly word and the sea was asked for favors. When cutting down a tree Tlingits would say, "Black bear skins have been laid in the place where you are going to fall," but the skins were not actually placed there. Halibut lines and hooks were spoken to, so that they would not "be ashamed and fail." A man digging for clams would say, "Do not go down so fast or you will hit your mother-in-law in the face."

These approaches to the non-human world are comparable to talking to dice, and not to prayer as the Christian understands that word. The Tlingit believed that the universe was made up of certain orderly sequences of cause and effect and a great deal of something else which he called *Yek*. Yek was essentially unpredictable. It might thwart the best laid plans or save the poorest. It is commonly translated "the supernatural," but it had no divine attributes such as being all-powerful, all-wise, or all-good. It had no real unity and was not purposive. The shaman, whose function was to induce or compel Yek, was more powerful among the Tlingits than were the medicine men of any of the other northwestern people.

The Tlingits had one word for the spirit of a living man and another for the spirit of a corpse. Apparently the first of these survived the body, but in a place called Corpse-Spirit Land. There were two such places. One was in the sky. Here time passed in a contented peace, and when the world got too hard for a living man the spirits called him to them. Those who died by violence and were not called had to reach this land by their own efforts. This was difficult, and practically impossible if the death had not been avenged, in which case the spirit blew away. There was a less desirable country under the earth, reserved for those who died by drowning. The Tlingits had all this on the authority of men who died and came back to life.

On the shores of Shoemaker Bay is WRANGELL INSTITUTE, for which an extent of shoreline and five hundred acres of forest land have been set aside within Tongass National Forest, one of the two vocational boarding schools for Natives maintained by the Federal government. (For the other, see Part II, 5, Eklutna.)

Wrangell Institute was established in 1932 as a coeducational, vocational boarding school for Native children. Over one hundred boys and girls come from eighteen towns and villages of southeastern Alaska, from communities the life of which is based on fishing. Most of the pupils are actively engaged at some time during the summer on fishing boats or in salmon canneries and earn from fifty to several hundred dollars each during the brief fishing season. The Institute attempts to bridge the gap between the village elementary school and adult life in southeastern Alaska fishing villages for the Natives, and as such builds its curriculum around local experiences and needs. Thus the students study the natural life of the sea and shore, the village communities and their economic and health problems, business accounting, and homemaking with respect to the actual conditions of housing and food supply of the average village home. In addition, contributory skills are taught: woodworking, building construction, boat building, blacksmithing and machine-shop practice, engine installation, operation and repair, navigation, and the household arts. About a quarter of the time allotted to curricular activities is spent by the boys in working on the plant and grounds.

The Institute is a residential school. Student self-government is practiced through the school council and the boys' and girls' dormitory organizations. The students also assume responsibility and cooperate with staff members in assemblies, control of health and sanitation, upkeep of the lighting and heating facilities, student accounts, and athletics. The great majority of them step out immediately into married life and adult occupations, and have no further opportunity for guided experience in social living.

Fourteen miles south of Wrangell is long-deserted STIKINE VILLAGE, once remarkable for its totem poles, most of which have been removed to Chief Shakes' House at Wrangell. A few rotten poles remain, hopelessly past restoration. Many traditions linger around this ancient site of a great Tlingit town, which was probably at the summit of its prosperity during the late eighteenth and early nineteenth centuries. One of these tales refers to a battle in the series of wars between the Stikines and the Sitkas. Fighting all summer in a desultory squabbling way, now under cover, now in the open, watching for every chance for a shot, none of the Indians dared venture to the salmon streams or berry fields to procure their winter stock of food. At this crisis one of the Stikine chiefs came out of his blockhouse fort into an open space midway between the fortified camps, and shouted that he wished to speak to the leader of the Sitkas.

When the Sitka chief appeared he said, "My people are hungry. They dare not go to the salmon streams or berry fields for winter supplies, and if this war goes on much longer most of my people will die of hunger. We have fought long enough; let us make peace. You brave Sitka warriors go home, and we will go home, and we will all set out to dry salmon and berries before it is too late."

The Sitka chief replied, "You may well say let us stop fighting, when you have had the best of it. You have killed ten more of my tribe than we have killed of yours. Give us ten Stikine men to balance our blood-account; then and not till then will we make peace and go home."

"Very well," replied the Stikine chief, "you know my rank. You know that I am worth ten common men and more. Take me and make peace." The chief stepped forward and was shot down, and peace was thus established.

At the mouth of Stikine River is a small fishing village, STIKINE, of varying population. Stikine River rises in Britsh Columbia and flows across the international boundary into the waters of the archipelago. Its name, an Indian word, means "great river." The breakup of the Stikine is awaited eagerly each spring by prospectors and miners, who board the boat of the Barrington Transportation Company and head up the river for the Interior via Telegraph Creek. No less eagerly does the little settlement at the head of the Stikine await the arrival of the first boat, with food supplies and fresh fruit and vegetables. The boats are especially constructed for shallow water, with sloping bows that make it possible to tie up almost anywhere along the shore. One of the great drawbacks to navigation on the Stikine is the constant variation of water level between its mouth and Telegraph Creek. Rains below the canyon may swell the lower river to flood stage, while above the cleft in the coast range the water may remain perilously low.

During a trip up the Stikine in 1879 John Muir counted over a hundred glaciers along the walls of the canyon, and from Glenora Peak, overlooking 300 miles of coast range, he counted 200 more. The largest was the Big Stikine. "Standing in the gateway of this glorious temple," wrote Muir, " . . . its outlines may be easily traced, the water foreground of a pale-green color, a smooth mirror sheet sweeping back five or six miles . . . bounded at the head by a leveled barrier of bluish-white ice four or five hundred feet high. A few snowy mountain tops appear beyond it, and on either hand rises a series of majestic pale-gray granite rocks from 3,000 to 4,000 feet high, some of them thinly forested and striped with bushes and flowery grass on narrow shelves . . . others severely sheer and bare and built together into walls like those of Yosemite, extending far beyond the ice barrier, one immense brow appearing beyond another with their bases buried in the glacier."

On the west bank of Stikine River was Dirt Glacier, so named by Hunter in 1877, but now known as Mud Glacier. "Its surface for a mile or so above the front is strewn with moraine detritus, giving it a strangely dirty, dusky look, hence its name. . . . I was surprised to find alpine plants growing on the ice, fresh and green, some of them in full flower."

South of Wrangell by way of Stikine Strait is Prince of Wales Island (reached by motor launch from Ketchikan or Wrangell), the home of most of the Haida Indians in Alaska. Their principal towns are Hydaburg (p.o., 319 pop.) and Kasaan (p.o., 112 pop.).

The historic aboriginal ruins of the former Haida village known as Old Kasaan were set aside as a national monument by proclamation of President Wilson, October 25, 1916. The monument covers twenty-eight acres on the east side of Prince of Wales Island, at Skowl Arm, so named for a former chief of the village. It is reached by launch from Ketchikan, 30 miles distant. The ruins—totem poles, grave houses, monuments, and portions of the original framework of buildings—represent a distinctive type of aboriginal American civilization, the vestiges of which are rapidly disappearing.

Old Kasaan village was built by Indians of the Haida tribe of British Columbia, who had their principal residence in the Queen Charlotte Islands. Several generations ago they migrated northward into the region of the Tlingits. The Haidas, together with the Tsimshians, likewise a British Columbia tribe, settled on different islands in the southern part of what is now the Tongass National Forest at favorable spots where they could find small areas of open beach upon which to build their villages. Each village consisted of one or more rows of low frame buildings erected along the shore just above high-water mark and facing the open water. The buildings were well constructed out of spruce and cedar planks and huge round timbers laboriously hewn out of the log by stone or shell implements. The marks of their primitive tools can be seen on all well-preserved totem poles and remnants of buildings. The building material was cleverly put together by notches and grooves cut into the edges of the planks, and along the framing timbers in tongue-and-groove fashion, thus insuring weather-tight, as well as very substantial, structures. Such methods were characteristic of the true type of aboriginal structure, and their general form and appearance were distinctive. After the country was occupied by the white man and lumber and nails could be secured, the buildings erected (before the villages were finally abandoned) were often a poor attempt to imitate the type of residence occupied by the Native's white neighbors.

Practically all of the village sites still contain some of the relics of their former occupancy, such as groups of carved totem poles, grave houses and monuments, and occasionally portions of the original framework of a building. The villages were abandoned shortly after Alaska began to develop, and towns and cannery settlements were built by Americans. At the time little thought or attention was given to the intrinsic historical or archeological value of these villages. The Native, before he learned the mercenary ways of the whites, trustingly left many of his personal belongings in his ancestral home. These consisted of finely carved or decorated articles of wood, bone, shell, and sometimes metal, used in cookery and other household duties, for feasts and dances, religious rites, marriage and death ceremonials, war equipment, etc. The curio stores of Seattle and other cities on the Pacific Coast were filled with a hodgepodge of valuable material taken from the villages of the Indians of Alaska.

Old Kasaan originally occupied a clearing, extending for a distance of six or seven hundred feet along a gravelly shore and covering a gently rising slope some three hundred feet back to a dense virgin forest. The first row of houses was immediately above high tide, so that the poles in front must have been splashed by the waves during stormy weather. Evidences are found of at least twenty fair-sized houses, but the size of the clearing indicates that there must have been more. At the west end of the front row of houses and really forming a part of the village itself is a small cemetery containing twenty or thirty graves marked by totems or covered with grave houses.

The descendants of the former inhabitants of Old Kasaan now reside principally at Kasaan, 12 miles from their ancestral village and adjacent to a salmon-packing establishment where many are employed during the summer months as fishermen and cannery helpers.

The languages of the Haida and Tlingits suggest a common source at some far distant time. When the Haidas entered Tlingit country, a similar social organization among the two peoples led to intermarriage.

The Haida clans, like the Tlingit, were grouped as Raven or Eagle. But among the Haidas each clan used a great many crests, where the Tlingits had only one or two. These crests were sometimes in opposite phratries in the two nations, what was Raven in one, being Eagle in the other.

Once a Tlingit girl who had married a Haida returned to her own people on her husband's death with a strange tale. She said her husband would never eat in public; but when they were alone together and she set out dried salmon, mice came out of his mouth and ears. The mice would eat the salmon, and go back into the man's body. The husband's brothers were properly horrified when they learned of this, but the girl lost caste with her own people by telling the story. Although she was the daughter of a chief, people did not respect her. They said, "We don't care about you. You used to feed mice."

The Haidas differed from the Tlingits in many customs. They called on their "opposites" to serve at a funeral and paid for this with a potlatch. But their great feasts were purely social and given by a chief to his own phratry, to enhance his standing with his own people.

Craig (p.o., 231 pop.) is the principal white settlement on Prince of Wales Island. Craig is a port of clearance for vessels plying between Prince Rupert, B.C., and the United States, and a Customs Office is maintained here. Craig is also an important center for Alaska fishing fleets which outfit here with oil, provisions, and general boat supplies. There is a large salmon cannery within the town limits and a sawmill, which is operated for the greater part of the year. Klawak (p.o., 437 pop.) is a village of Tlingit Indians a few miles from Craig. The first pack of salmon canned in Alaska was put up here. Sulzer, near Hydaburg, was once a center of mining activity but now depends on salmon canning. Tokeen (p.o., 16 pop. est. 1933) is on the northwest coast of Prince of Wales Island, about 120 miles from Ketchikan. Shakan (1 pop. est. 1938), north of Tokeen and 75 miles southwest of Wrangell was once an important settlement. It grew up in 1879 around a sawmill established by Oliver Fontain, and was known at the time as "Oliver's Place." In 1938 the recipient of a questionnaire addressed to the Chamber of Commerce of Shakan wrote: "There's nobody living in Shakan Bay but myself. I'm here only trying to make a living and having a hard time of it."

Leaving Wrangell, the steamer passes through Wrangell Narrows. To make this dangerous passage safe the Federal government expended nearly $600,000 in dredging the channel to depths of 21, 24, and 27 feet, and in blasting out rock pinnacles. The cost of such work for a single year (1937) was $25,000.

Wrangell Narrows lie between Mitkoff Island and Kupreanof Island, the latter 52 miles long and 28 miles wide, named after Captain Ivan Andreevich Kupreanof, who succeeded Baron Wrangell as governor of Russian America in 1836.

On Mitkoff Island, 111 miles northwest of Ketchikan and 108 miles southeast of Juneau, is Petersburg (p.o., 1,252 pop., many Natives), a modern fishing town and a center for fox and mink raising. This is glacier country: the sun is hot, the air clear, the wind pure and heady. The lawns are close-cropped and gay with flowers, and autos speed along the plank streets. On rafts in the harbor are floating houses painted with red lead, complete with window curtains. Lanky blond Northerners lean against the wall and watch tourists lift the cover of a box labeled, "Red Bat: Dangerous When Flying," that contains a brickbat.

Petersburg was named not after the Russian city but after Peter Buschmann, who in 1897 built a salmon cannery here, and later a sawmill. The town was incorporated in 1910, and has a growing population estimated in 1938 at 1,500. The principal industry is fishing for halibut, salmon, herring, and crabs. The famous Petersburg shrimp are taken in these waters. The town is also an outfitting point for game hunters. The only traffic light in Alaska in 1938 was at Petersburg. The *Petersburg Press,* a weekly newspaper, is published here.

A 24-foot channel was dredged to the wharves in 1937, a small boat basin constructed, and other harbor improvements completed at a total cost of about $87,000.

A site several miles south of Petersburg, overlooking Wrangell Narrows, has been definitely selected for an agricultural experiment fur-farm station, and $20,000 has been appropriated for its use. The station will conduct experiments in raising fur-bearing animals and perform research in their diseases, food habits, etc.

"Wild fur is becoming more scarce," notes Earl N. Ohmer, a member of the Alaska Game Commission and an authority on fur farming. "But the demand for fur is still high and the market is depending more and more on ranch-raised fur. At present there are less than 300 fur farms in Alaska but the operation of a model farm and laboratory should prove a boon to those who wish to enter the business.

"The parent stock from all fur ranches came from the wild; but the wild-caught animals, raised in ranches, bred with the idea of careful selectivity, better feeding, and under close supervision for ailments that may be present, develop into finer animals and grow much better fur.

"At present, many ranches let their foxes run loose on islands which they lease from the U.S. Forest Service, but mink are confined in pens. This pen-raised mink makes a leather which is lighter, also a more uniform fur, which makes it easier for the purchaser to get a fine blend for good selection. . . . The pen-raising of foxes is the solution of controlling and eliminating the parasites and ailments which now affect wild and island-raised foxes."

POINT AGASSIZ is a post office 25m. north of Petersburg. Beyond, on the right are KATE'S NEEDLE (10,002alt.) and DEVIL'S THUMB (9,077 alt.), marking the international boundary. FANSHAW (p.o., 4pop.), once a cannery village, is now a fox-farming district. Five Finger Lighthouse, on a near-by island was built in 1902 and is the oldest lighthouse in Alaska. KAKE (p.o., 386pop.) is a Native village on the west shore of Kupreanof Island, 65 miles northwest of Petersburg, with a government school for Natives, two general stores, and a sawmill. Fishing and canning are the principal industries.

The steamer crosses FREDERICK SOUND and continues north between the mainland and ADMIRALTY ISLAND, which has a total area of 1,665,000 acres and is part of the great national forests of Alaska.

TYEE is a post office near the southern point of Admiralty Island. At HOOD BAY, on the west coast of the island, is a cannery and two Native settlements, ANGOON (p.o., 319pop.) and KILLISNOO (3pop.). Both names are Native words, Killisnoo probably being a corruption of *Kootznahoo,* "bear fort." A reduction plant was established at Killisnoo in 1880, probably the first to operate on the Pacific coast. The company began as a whale-reducing enterprise, but later put herring through the plant for oil. In 1882 one of the company's whaling guns exploded and killed a Native shaman employed on the boat. The

Indians demanded four hundred blankets from the company as compensation. When this was refused, the Indians captured two white men who had no relation with the company and held them at Angoon, demanding four hundred blankets in ransom. This was in accordance with Indian custom which required that such a death be avenged by an equivalent death, or a money compensation from the tribe of those responsible. The revenue cutter *Corwin* was sent to rescue the men. On the arrival of the vessel the Indians allowed their captives to go. Captain Merryman of the *Corwin* called the chiefs aboard and demanded an explanation. They still asked four hundred blankets for the death of the shaman. The commander told them plainly, "That was an accident. You get no pay for that. But I want you to pay four hundred blankets for capturing and holding these two miners. I'll give you two hours to bring the blankets or I'll shell your village." The poverty-stricken village could collect only fifty. These the captain threw overboard; he then ordered the Indians to vacate their houses as he would start shelling in ten minutes. The entire village was destroyed. Seven years later the Federal government paid the Natives for property lost at that time, giving them cloth, tobacco, and other useful commodities to the value of $6,000.

LAKE HASSELBERG, in the center of Admiralty Island, and LAKE FLORENCE, on the west side, are fishing grounds that were practically inaccessible before the use of planes. Regular flights are now made from Juneau to both points. Incredible catches of cutthroat trout, many measuring two feet or more in length, have been made here.

Admiralty Island has an abundance of wild life. Sitka deer, beaver, land otter, muskrat, weasel, and marten abound. The Forest Service, with the aid of CCC workers, has developed a trail system and built shelter cabins for overnight use. Some light cedar skiffs have also been built for public use.

In 1932 it was estimated that there were nine hundred Alaska brown bear on Admiralty Island. Hunting is permitted in the spring and fall. This species is one of the largest in the world, sometimes weighing as much as 1,600 pounds. The bears spend about five months of the year in hibernation, during which time the cubs are born. In the summer they keep to the muskeg, scrub timber and willow thickets in the interior of the island, except for excursions to the streams during the salmon season.

At PACK CREEK, north of WINDFALL HARBOR, there is a bear observatory and camera station which affords safe concealment for photographing bears while they are fishing. The animals toss the salmon out of the water for sport as well as for food. An investigator for the Bureau of Fisheries once reported that a bear could eat a quarter of a ton of salmon in a day. While this would be pretty heavy, even for a one-ton bear, it is possible that they at least destroy that amount, as they frequently eat only a small piece from the neck of each fish.

HAWK INLET (p.o.) and FUNTER (p.o., 14 pop. est. 1938) are on the northern part of Admiralty Island, about 50 miles from Juneau in a mining and salmon area. One of the earliest canneries in Alaska was established at Funter, but it has been unable to operate since about 1930, because of lack of water.

East of Admiralty Island on the mainland is WINDHAM (p.o., 27 pop. est. 1938) which began as a mining camp but is now a fur-farming district. At the mouth of SUMDUM BAY are marten and mink farms. SUMDUM GLACIER and MT. SUMDUM (6,690 alt.) are on the mainland near HOLKHAM BAY. SUMDUM (p.o., 2 pop., 1938) was a mining center in 1908. The curious name is believed to have been invented by the Indians of this vicinity to describe the sound made by the ice. "A berg suddenly going to pieces is a grand sight," wrote Muir while at Sumdum Glacier, "especially when the water is calm and no motion is visible save perchance the slow drift of the tide current. The prolonged roar of its fall comes with startling effect, and heavy swells are raised that haste away in every direction to tell what has taken place, and tens of thousands of its neighbors rock and swash in sympathy, repeating the news over and over again. We were too near several large ones that fell apart as we passed them, and our canoe had narrow escapes. The seal hunters are frequently lost in these sudden berg accidents." Twelve miles from Sumdum, at the head of the bay, is DAWES GLACIER.

Of the several thousand glaciers in Alaska, only a few hundred have been named. The smallest Alaska glaciers of any consequence are larger than the famed Nisqually Glacier on the slope of Mt. Rainier, one of the largest ice masses in continental United States. Malaspina Glacier (see Part II, 3), with an area of 1,500 square miles, is larger than Rhode Island.

John Muir found that the same questions were asked regularly about glaciers and compiled the following glacier catechism.

"Is that a glacier," they asked, "down in that canyon? And is it all solid ice?"

"Yes."

"How deep is it?"

"Perhaps five hundred or a thousand feet."

"You say it flows. How can hard ice flow?"

"It flows like water, though invisibly slow."

"And where does it come from?"

"From snow that is heaped up every winter on the mountains."

"And how then is the snow changed into ice?"

"It is welded by the pressure of its own weight."

"Are these white masses we see in the hollows glaciers also?"

"Yes."

"Are those bluish, draggled masses hanging down from beneath the snowfields what you call the snouts of the glaciers?"

"Yes."

"What made the hollows they are in?"

"The glaciers themselves, just as traveling animals make their own tracks."

"How long have they been there?"

"Numberless centuries."

Above Holkham Bay the steamer enters STEPHENS PASSAGE, in which the steamer *Islander* was wrecked in 1901. It was said to have carried $3,000,000 in gold dust, some of which was recovered by panning in 1934.

TAKU INLET flows into Stephens Passage eight miles south of Juneau. In 1849 Tebenkof named this Icy Arm. It has also been called Elk Arm and Glacier Inlet. TAKU RIVER, tributary to the Inlet, has its headwaters in British Columbia. The native name, Taku, was given by Vasilief in 1848 to the harbor and village and by Thomas in 1888 to Taku Mountain (2,170 alt.) near TAKU HARBOR (p.o.). On Taku Inlet is TAKU GLACIER, a mile wide and from 100 to 300 feet high at its face. The Indians called it Klumma Gutta, or Spirits' Home. It extends 30 miles down the east side of the Canadian coast range, varying from two to three miles in width, with at least ten tributaries. At certain stages of each tide masses of ice break away from the glacier and crash into the water. This process is called calving. If it does not occur naturally while the ship is there, it may be induced by blasts of the steamer's whistle.

Entering GASTINEAU CHANNEL, the tidewaters of which have a rise and fall of sixteen feet, the tall peaks of Douglas Island are to the left, and to the right the mountains of the mainland backed by still higher ranges. The channel was named for a Hudson's Bay Company steamer, named in turn for a river in Quebec.

JUNEAU (p.o., 4,043 pop.) is the capital of Alaska. The town lies at the water's edge. Behind it rise the steep, timbered slopes of MT. JUNEAU (3,590 alt.) and MT. ROBERTS (3,600 alt.). A bridge spans the channel to Douglas Island, a wooded, mountainous mass with barren peaks well above the timber line.

The harbor offers excellent docking facilities for large and small boats. A breakwater 80 feet high, extending 1500 feet from high-tide line, has been built of waste rock from the Alaska Juneau mine. According to the Juneau chamber of commerce, fifty million tons of rock were used in building the first thousand feet. Juneau is the headquarters port for the Customs District of Alaska. Over 500 steam and motor vessels have their home port here, and launches maintain weekly schedules between the town and small communities near by. In 1936 the commerce in Juneau harbor totaled 120,477 tons, valued at $12,580,253.

Gold mining is the chief industry. The Alaska Juneau mine employs 900 men and has an annual payroll of over $1,500,000. There are fourteen salmon canneries in the Juneau district. Commercial fishing is confined to salmon and halibut, but herring, shrimp, and crab are plentiful. An electrically operated sawmill produces lumber, most of which is sold in Alaska. Fur farming is a common industry. Many farmers raise stock in pens on the mainland and a number of island ranches are leased from the Forest Service. What agriculture there is, is entirely for local use. There is some stock raising, and six government-inspected dairies are near the town. The rainfall is too heavy for grains, but garden vegetables and small fruit are excellent.

Stories of gold in this region reached Sitka through the Indians, and in the summer of 1880 Joe Juneau and Dick Harris explored the mountainsides and creeks along Gastineau Channel. They found several rich deposits in Silver Bow Basin, and before the following spring more than a hundred men were camping where the town of Juneau now stands. This was the first gold rush in American Alaska and marks the beginning of the mineral history of the Territory.

Joe Juneau sold his holdings in Silver Bow Basin for a large sum. He is said to have been frightened by the thought that he wouldn't live long enough to spend it all. But he spent this and several other fortunes, lived to run a boarding house in Dawson, and died penniless. Harris and Juneau quarreled for two years over the name of their camp. A miners' meeting in 1882 reached a compromise, naming the town Juneau and the district Harrisburg.

At that time such miners' meetings were the only civil law in Alaska. Congress had been content to make the territory a customs district and a department of the Navy. The miners' meetings kept order with a minimum of friction, and a remark preserved from those days illustrates the temper of the men who lived under this law. "We had an earthquake a while ago, so we know the Lord ain't forgotten us, if the government has."

In 1886 Chinese labor was increasing in the Harrisburg district. The miners put all Orientals aboard a ship and headed it for Wrangell. The governor of Alaska ordered the Chinese back to the mines. But the miners threatened to line the shore with shotguns, and the Chinese did not return.

Juneau was officially made the capital of Alaska in 1900, but the executive offices were not moved from Sitka until 1906. The present six-story Federal building was erected in 1931 at a cost of $1,000,000. The Territorial Legislature and the U.S. District Court meet here. Twenty-five Federal and seven Territorial departments have offices in the building.

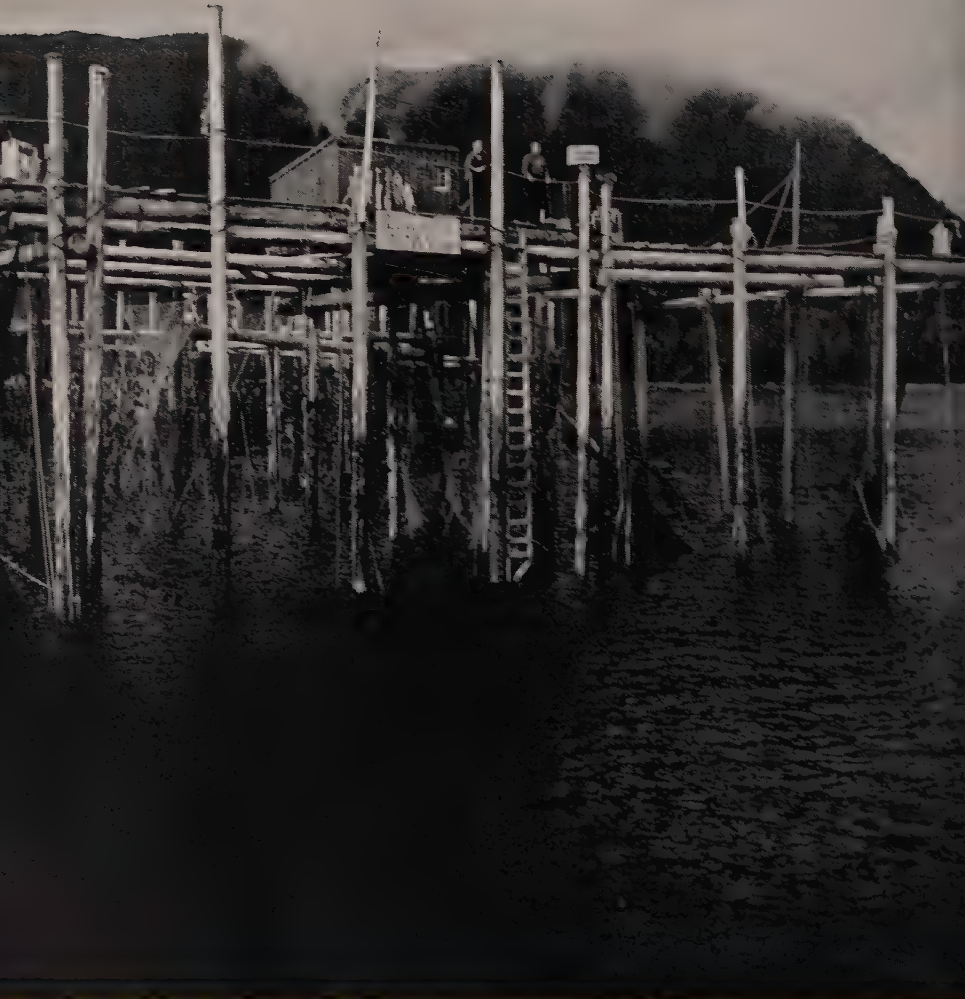
In religious organizations, clubs and recreational facilities Juneau compares with any town of its size in the United States. There are nine religious groups: Russian Orthodox; Roman Catholic, which maintains a parochial school and the Hospital of St. Ann; Lutheran; Episcopal, with Trinity Cathedral the headquarters of the Diocese of Alaska; Presbyterian, which conducts a Native mission; Christian Scientist; Bethel Pentecostal, with a mission and a children's home; and the Salvation Army. Fraternal orders include the Legionnaires and Auxiliary, Eagles, Order of the Eastern Star, Elks, Knights of Columbus, Masons, Moose, Mooseheart Legion, Odd Fellows, Pioneers of

Natural Wealth

IN 1900 the wealth of Alaska was chiefly in furs and the newly discovered gold. Furs are still one of the great resources of the country, the 1938 output being worth approximately $3,000,000. But in that year the canned salmon and other fishery products shipped to continental United States were valued at more than $50,000,000. Three-fourths of this was salmon. Carefully protected, fish should remain a source of Alaska wealth for all time. In the last fifty years Alaska has produced more than $500,000,000 worth of gold, the 1938 output being approximately $18,500,000. About two-thirds of this is from placer mines, but the simple methods of panning have almost disappeared. Eighty percent of placer gold is recovered by dredge, and the remainder largely by hydraulic methods. Drift mining, or deep placer mining, has added many years to the life of the Alaska placer fields and cold-water thawing, in place of thawing by superheated steam, has greatly reduced operating costs. Gold lodes, or hard-rock mines, occur throughout the Territory, but three-fourths of this output is from southeastern Alaska.

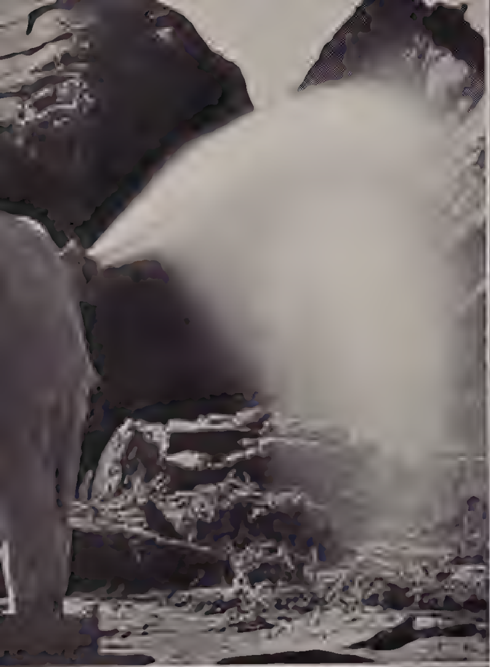
In 1938 receipts from the sale of timber amounted to less than $52,000; but the manufacture of pulp and paper will undoubtedly become one of the great industries of Alaska. The timber stand on the two national forests is estimated to be 84,000,000,000 board feet. The predominating wood species are particularly adapted to the manufacture of newsprint paper with a possible sustained yearly cut of 1,000,000,000 board feet, sufficient to produce not less than 1,300,000 tons of this product. The Alaska coal regions remain largely undeveloped, but coal to the value of $500,000 was produced in 1937, chiefly from the Matanuska and Healy River fields. Alaska has approximately 65,000 square miles of tillable land; but at present fewer than 2,000 people are engaged in farming, and farm products valued at almost $1,000,000 are shipped annually to Alaska from Seattle. This situation is due chiefly to limited transportation facilities and not to anything inherent in Alaska soil or Alaska climate. With increase in population and further development of the Territory, Alaska can expect to produce most of its foodstuffs at home.

ABOVE: *Panning for Gold*
BELOW: *Trapper's Cabin*

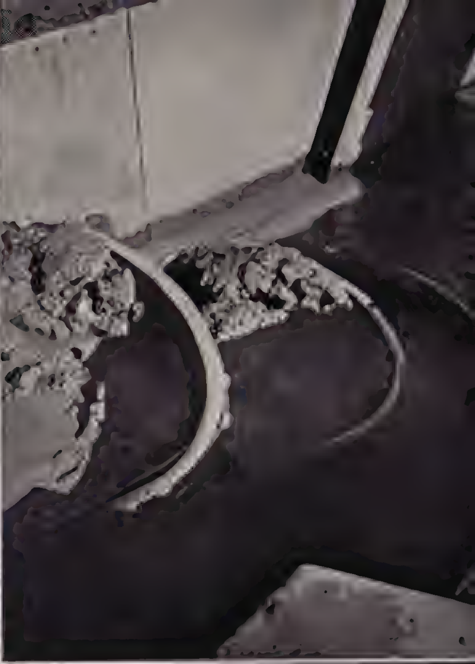


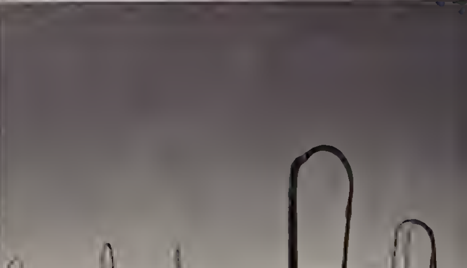
Standing Salmon Trap

Floating Salmon Trap



ABOVE: *Hydraulicking*
BELOW: *Drift Mining*





ABOVE: *Gold-Dredge Buckets*
BELOW: *Cold-Water Thawing*

Alaska Juneau Gold Mill

ABOVE: *Alaska Timber*
BELOW: *Log Boom*

ABOVE: *Interior at Healy*

ABOVE: *Healy Coal Mines*

BELOW: *Hemlock and Spruce, Polk Inlet*

ABOVE: *Dairies Near Mendenhall Glacier*
BELOW: *Hay Fields at Matanuska*

Alaska and Auxiliary, Rebekahs, Shrine Club, and Scottish Rite Masonic. There are four troops of Boy Scouts and Girl Scouts and a Parent-Teacher Association.

Juneau has a public library, public schools for white and for Native children, and two daily newspapers *Alaska Empire* (daily, 10 cents) and *Alaska Press* (daily, 5 cents). There are two motion-picture theaters. The city maintains public tennis courts and playgrounds, and a baseball diamond. On Mendenhall Lake, facing Mendenhall Glacier, is a rifle range with well-equipped shooting house containing lunch and club rooms where visitors are always welcome. At THANE (68pop.), four miles south of Juneau, is a "million-dollar" nine-hole golf course, so named because it is laid out on tailings of the old Alaska Gastineau Gold Mining Company.

THE ALASKA HISTORICAL LIBRARY AND MUSEUM (second floor of Federal Bldg.; open 9-5 and during steamer hours, free) was established by act of Congress, June 1900. It was opened to the public in September, 1920, after acquiring Dr. Neuman's collection of Eskimo antiquities. Besides Indian work of historic or art value the museum has documents and relics from the Russian régime, and a large collection of Alaska newspapers, and is a depository of government publications.

Some of the Eskimo work in the museum is more than seven hundred years old. Particularly interesting are delicate carvings done with stone tools.

On display is a fine Chilkat blanket. The weaving of these blankets is all but a lost art, and those offered for sale to tourists are often not so carefully made and are colored with commercial dyes. The baskets in the museum's collection are extraordinarily beautiful and have geometric or naturalistic designs. Totemic symbols have been recently introduced in basketry to satisfy tourist demand.

Most common objects made by Alaska Indians have a mythical origin. The Chilkat blanket goes back to the time before a great flood when animals could remove their skins at will. A girl, returning from gathering wild celery, came upon a handsome young man and went home with him as his wife. There she found that he was really a grizzly bear, and, to top things off, already married to a lynx. One day she saw the lynx weaving a blanket skin for herself. She watched until she learned how it was done. The Great Raven visited the home and received a blanket as a dance gift, which he in turn gave to his people, the Indians.

The materials of the Chilkat blanket are goat's wool, the inner side of the yellow cedar, and sinew. The cedar covered with wool is the warp; wool thread is the woof. Ornamental parts are sewed on with sinew. The loom is two upright posts across which is stretched a narrow piece of skin. From holes at regular intervals in the skin the warp strings are hung and bound together by the woof. The wool of three to ten goats is required for one blanket. The general weave is a twilled diagonal called *hee-ḳar-ree,* "rough" or "uneven." The warp is never colored. The three colors used for the woof are black, yellow, and bluish green. Black dye is made from alder bark; green, from a lichen; and blue-green, from copper ore. The design of the Chilkat blanket is stylized. The central part of the blanket has a totemistic figure, while the rest of the pattern has little meaning, and is used only to give richness to the color effect. The pattern is kept in the family for generations and is almost synonymous with the family totem. The Chilkat blanket was used for ceremonial dances and at funerals. If used in a dance it ceased to be private property and belonged to the clan.

The Tlingit basket came into existence because the Sun's woman idly picked up some spruce roots and wove them into shape. The Sun became interested and enlarged the basket to hold his wife and her children, and then lowered them to the earth. Thus mortals first learned basket making. The basket is woven of grass and spruce roots. The roots are slightly charred, soaked in water, then drawn through a split stick to remove the bark. The root is split into three parts: the center for ornamental work, the rest for the body. The principal colors are the same as those used in the blanket. Different characteristic weaves are used for water, berry picking, eating dishes, general utility, and ceremonial purposes. A small basket, heavily ornamented, is for drinking sea water, in order to insure good hunting—four sips to be taken four successive mornings before the raven calls.

Against the slope of Mt. Roberts, at the lower end of the town, is the ALASKA JUNEAU MINE (admission to mill only, free 2 to 5, weekdays), the largest gold-mining operation in the world, from the standpoint of tons mined.

The earth around Juneau was built up in layers of mud deposit and volcanic flow. At some time an upheaval lifted and folded these, leaving internal fractures which later filled with quartz. The original deposits now lie in roughly parallel belts that dip steeply to the east. Through them are irregular quartz veins following the fractures left in the slate by the twist and pull of the upheaval. Gold-carrying solutions later trickled around and through the quartz, depositing gold at irregular intervals. What was the main channel for the mineral solutions is now known as the Nugget Gulch ore band.

The early prospectors found and mined this gulch, following a quartz vein down from the surface outcrop. But the gold content, frequently less than one dollar a ton, was too little for this kind of mining. In 1897 the Alaska Juneau Company bought up the twenty-three lode claims that covered the outcrop and attacked the mountain as a whole. Still working from the surface, they broke up all the rock and sorted out the quartz to be milled. But even this was not on a large enough scale to make a profit from such extremely low grade ore, and in 1913 they initiated the present "caving" system.

After Nugget Gulch was filled with quartz veinlets and the quartz had been streaked with gold, an earthquake shattered this ground. It seems probable that far below Nugget Gulch, running at right angles to it, there was another great fracture which had never filled and which finally caved in. The north part of the Nugget Gulch ore band now lies 1,800 feet lower than the south part, and 2,000 feet to the west of it. Between them is a hundred feet of crumpled rock called Silver Bow Fault. In 1913 the Alaska Juneau Company opened a tunnel along this fault, cutting the north ore body at a 45-degree angle and passing under the south ore body. From this they raised ventilating shafts and drove parallel levels through the whole ore body.

The mining is now done from below upwards. A shaft is raised, then a "bulldozing" chamber is cut out and a "grizzly" set above the shaft opening. The grizzly is made of 16-foot H-beams with 25-inch openings between the girders. Above the grizzly is an 18-foot raise called the drawhole. When four sets of raises and chambers are completed, mining is begun on the ore above.

At first the ore is drilled in a funnel above each drawhole until the four funnels meet. After the funnel edges cut each other, blasting is begun until caving takes place naturally. The falling rock usually breaks fine enough to pass the twenty-five inch grizzly. Where this is not the case the large pieces are drilled in the bulldozing chambers. The grizzlies pass the ore into pockets from which it is drawn through chutes into ten-ton cars.

This system of mining does not separate the quartz from the slate, and at first both were sent through the mill. This proved a costly mistake. The ore is now sent into the mill over a coarse screen which removes the water and small pieces, and passes the oversized ones to a sorting belt. The belt runs over a crushing bowl and four sorters pull off the ore and allow the valueless rock to travel to the waste bin outside. There is a clear color difference between the white quartz and the other material which is dark, so that one sorter can pull off eighty tons of ore in an eight-hour shift. After the first crushing the rock passes over a second belt and here one sorter can take off twenty-five tons of ore per eight-hour shift. Fifty per cent of the material trammed from the mine is eliminated in these two processes, leaving a product of sufficient value to justify the further milling processes.

The ore is first crushed and ground to the proper fineness and then sent to concentrating tables, where it is divided into rough concentrate, dirty middling, and waste tailing. The divisions are made so as to produce a clean tailing and the concentrate and middling are cut large in proportion to the mineral content of the feed. This is the reverse of table work in an ordinary concentration mill. The concentrate and middling are sent to reconcentrating tables and the process repeated. A finished concentrate and clean waste tailing are never made on the same table.

High grade concentrate ($20,000 to $30,000 gold per ton) is collected daily in an amalgam barrel and retorted at intervals. Eighty percent of the total gold recovered at the Alaska Juneau is in the form of bullion. A table concentrate, 56 percent lead, 20 percent iron, 30 oz. silver, and $300 gold per ton, is shipped every ten days.

The fine waste from the mill is discharged through flumes into Gastineau Channel in a dilute pulp, about ten percent solid. The coarse waste is carried from the bin by gravity trams to the beach 3,500 feet south of the mill. Two trains of cars are operated in balance, one being dumped while the other is loaded. The loaded train pulls the empty up the incline and feeds power back into the line. There is a slight net gain in power from the operation.

The waste rock is crushed, graded, and stored in bins. It is suitable for road making, railroad ballast, and concrete. Some of it is deposited on the beach as a breakwater. In 1937 this breakwater had a surface area of more than twenty acres. The total cost of disposing of the rock, including construction work for the expanding breakwater, is five cents a ton.

Since 1916 most of the work inside the mine has been done by contract, at so much per square foot. The work is not put up for bids as the company and the men have learned by experience what is a fair price. The company supplies tools and materials, supervises all work closely and carries the contractor and his men on the company payroll, paying them a base rate when their earnings do not exceed it. The distribution of the group earnings among the men is provided in the contract. By this method the company is able to treat at a profit the lowest-grade gold ore in the world.

A short distance from Juneau on the north side of Gold Creek is the Indian village of AUK and a Native cemetery. The dead are placed in small, decorated buildings. Many of their personal possessions are buried with them.

Easy trails lead from the town into Silver Bow Basin between the towering slopes of Mt. Roberts and Mt. Juneau, through the flowering wilderness that Juneau and Harris explored in the summer of 1880. A 4½ mile trail through a dense forest of evergreens, scattered with wild flowers and patches of snow, ends in the 3,600-foot summit of Mt. Roberts and overlooks a panorama of inland waters, mountains, and glaciers.

There are fifty miles of gravel-surfaced road near Juneau. Glacier Highway runs from Thane, through Juneau, thence north to Mendenhall Glacier and Eagle River (frequent bus service).

This drive through a small area of the Tongass National Forest, along the shores of Gastineau Channel, leads past country homes, summer cottages, fur farms and dairies, through forests of hemlock, cedar, and blue-tipped spruce to the island-spotted waters of Lynn Canal. The mountains of the mainland loom close and on the western horizon are the snowy peaks of the Chilkat Range. Alpine bluebells grow on the mountainsides. Along the highways and in the canyons are purple lupin, wild hyacinth, yellow cowslip, dwarfed dogwood, fireweed, bog laurel, yellow water lily, blue and yellow violets, Arctic daisy, and wild lily-of-the-valley.

Mendenhall Glacier, named for the superintendent of the Coast Survey in 1892, is 17 miles long and 2 to 3 miles wide at its face. It is one of the few glaciers in the world accessible by automobile road. The ice is an unearthly blue where crevasses and caverns reflect the water. Swift, powerful streams are forced from under its mountain weight. At its snout is a jumbled mass of rock carried down from the higher land. The sides of the valleys along the glacier course are cut and scarred by the pressure of the ice. Beyond the glacier is Auk Lake, reflecting the glacier in a frame of evergreen trees, foothills, and mountains. Airplane trips may be made from Juneau covering Taku and Mendenhall glaciers in one flight.

Douglas Island, 18 miles long and 10 miles wide, was named by Vancouver for his friend the Bishop of Salisbury. A steel suspension bridge connecting Juneau with Douglas Island and the highway to Douglas City was completed in 1935 at a cost of $250,000.

In the spring of 1881 Perrie Enusard, a companion of Juneau and Harris, found gold quartz on Douglas Island. The quality was too poor for simple mining, often running as low as $1.50 a ton. Enusard sold his claim to John Treadwell of San Francisco for $400 and never made another strike of any value. Treadwell combined four such claims on the island and was able to make large profits from low-grade ore. More than $66,000,000 in gold was recovered during thirty-six years' operation. In 1917 a cave-in occurred, and the mines were flooded. These mines were an outstanding factor in the development of Alaska. Men came from the States to work in the Treadwell mines, and when they had made a grubstake ventured on into the Interior. Old miners returned here after a run of bad luck and fortified themselves for other ventures.

Douglas (p.o., 593pop.) was built during the operation of the Treadwell mines and is now largely a residential town for employees of the Alaska Juneau Company across the Channel. Douglas has a Native school, a school for white children, and an accredited high school. There are a few local industries. A salmon cannery furnishes seasonal labor, and the Alaska Juneau foundry, casting repair parts, is here. The foundry casts a monthly average of 65 tons of iron, 32 of steel, and 2 of brass. A major portion of the business section was destroyed by fire in 1937, but was soon rebuilt.

Skis are not an innovation along Gastineau Channel. They were necessary equipment in laying transmission lines over the mountains and for other construction projects. Recently sport trails have been built over these hills. A four-mile run on Douglas Island, built by the Forest Service, is 2,000 feet above sea level at its head and overlooks Stephens Passage and the shores of Admiralty Island. Skiing lasts well into the spring in the higher altitudes.

CHICHAGOF ISLAND, named for Admiral Vasili Chichagof, an Arctic explorer, 1765-6, is reached by plane or launch from Juneau. To the north are the great halibut fishing banks of Icy Straits and Cross Sound. Gold is mined on the island and tungsten and nickel ores are known to exist. The large brown and the grizzly bear are found here and on Baranof Island to the south. HOONAH (p.o., 514pop., largely Native) is a village on Chichagof Island, about 75 miles southwest of Juneau by water. The name, said to mean "cold lake," is that of a local tribe of Indians (Hooniah). A United States government school for Natives is maintained here. There are two general stores, two churches, fish canneries and a sawmill. TENAKEE (p.o., 210pop.), in the northeast section of Chichagof Island, is a fishing and canning center with two general stores. A portage 150 yards long connects Tenakee Inlet with Port Frederick. KIMSHAN COVE (p.o., 81pop. est. 1938) is a mining village on the west shore of Chichagof Island without hotel accommodations. The name is Chinese, meaning Gold Mountain. The Hirst-Chichagof Mining Co., incorporated in 1919 with a capitalization of $1,000,000, is at Kimshan Cove. Telegraph service is maintained to CHICHAGOF (p.o., 67pop.), a mining camp on the west coast of the island, 150 miles southwest of Juneau by waterway. The Chichagoff Mining Co. (present capitalization $49,000) controls the Chichagoff Power Company and supplies power under contract to the Hirst-Chichagof mines.

PERIL STRAIT, which separates Chichagof Island from BARANOF ISLAND, was so named by the Russians because one hundred and fifty Aleuts died from eating poisonous mussels gathered there.

Midway on the west coast of Baranof Island, named for the director of the Russian America Company, is SITKA (p.o., 1,600pop. est. 1939), the former capital of Alaska.

Approaching Sitka by the usual steamer route, six miles to the north on the left is a small bay, the site of OLD SITKA. Sitka harbor is dominated by Mt. Edgecumbe on Kruzof Island to the west, an extinct snow-capped volcano rising above a chain of blue hills. The town itself lies on the harbor at the foot of Mt. Verstovia, 3 miles to the east. Opposite the town is Japonski Island, 200 acres, so named because in 1805 shipwrecked Japanese sailors remained on the island. Later it became a Russian magnetic observatory. Today the Navy Department maintains a seaplane station here.

The oldest town in southeastern Alaska, Sitka is rich in historic interest. For a century it was the metropolis and capital of Alaska, and long the gayest and most brilliant city on the whole Pacific coast.

In July, 1741, Captain Alexei Chirikof sailed into what is now Sitka harbor and dropped anchor in a fairyland of islands and weed-hung rocks. One of the ship's boats was sent to reconnoiter the shore, and when it did not return in three days, a second was sent after it. This boat signaled a safe landing but did not return. The ship waited three weeks and then put back to sea. Nothing was ever heard of Chirikof's men, although they or their descendants were looked for, for eighty years. Sitka Indian tradition says that a chief dressed himself in the skin of a bear and lured the party to its death.

Other captains put into this harbor during the eighteenth century and entered in their logs descriptions of the great snow-capped, truncated mountain: among them Don Francisco de la Bodega y Quadra in 1775, and Captain Dixon and Captain Portlock in 1787. Captain Cook, in 1778, named the volcano Edgecumbe, for the hill at the entrance to Plymouth harbor, England. By 1800 the harbor was a recognized port-of-call for New England clipper ships on their way to the China seas. Here Yankees and Sitka Indians, part of the great Tlingit nation, matched wits in sharp trading; the Yankees frequently getting the worst of it.

In 1799 a Siberian trader, Baranof, came to Sitka from Kodiak with thirty Russians and several hundred Aleuts. He carried a charter from the Russian government which made him head of the Russian America Company and gave him exclusive rights to all the wealth in the territory. He was under orders to stop the trade in furs and ivory carried on by other nations, to protect the Indians in their life and property, to feed them in time of disaster, to educate their children and, if possible, to save their souls. The Indians were unaware of this and resisted the newcomers vigorously.

Baranof bartered with them for a townsite six miles north of their fortified village and built Redoubt St. Gabriel (Old Sitka). The rain fell incessantly, his men were sick with scurvy, and ten of his thirty Russians had to stand guard. The Tlingits were hostile, and were held in check mainly by Baranof's brutal but effective personality. When the fortifications were completed Baranof returned to the post at Kodiak and left St. Michael in charge of Medvyednikof. Two summers later, while the Aleuts were away hunting, the Tlingits captured the redoubt, killed the twenty Russian men, and took the women and children prisoners.

Baranof returned to Sitka in 1804. The Indians, in addition to their walled village on the hill, had a stronger fort near the river mouth, to which they retired. The Russians occupied the town and bombarded the river fort for ten days. Land attack was impossible and cannons fired from the vessels at sea had no effect on the heavy spruce walls. During the night of October 6th, the Tlingits retreated secretly, expecting no quarter from their enemies. They left behind the bodies of five children whose cries might have revealed them. Suffering greatly from fatigue and hunger they crossed the mountains to Sitkoh Bay and built another fort which sheltered a thousand enemies of the white man.

In September, 1805, Nikolai Petrovich Rezanof arrived at Sitka on a tour of inspection and found the settlement facing starvation. Rezanof bought the cargo of an American ship which fed the colonists for a few months and then sailed for the Spanish settlement at San Francisco. Rivalry between Russia and Spain had precluded any trade between their colonies up to that time. Rezanof had to override this and purchase supplies from the Spaniards without giving them any inkling of the plight of the Russians at Sitka. This he accomplished in less than two months with the aid of fifteen-year-old Doña Concepcion Argüello, sister of the commandant of the post. The imperious young girl was so moved by the courtly manners of Rezanof and the courtly life he promised her that she swept aside the national and religious prejudices of her family and announced her betrothal to the Russian, pending permission from Rome. Rezanof, having accomplished his mission, returned to Sitka with the supplies, but died at Krasnoyarsk on his way back to St. Petersburg. Doña Concha in due time entered a holy order and her story—six weeks of interplay between ambition and diplomacy—took a high place in the romantic annals of Spanish America.

Baranof rebuilt the village on the hill and named it New Archangel, under the patronage of St. Michael. But the Indian word Sitka, thought to mean "by-the-sea," was never lost, and the Russians themselves frequently used it in their reports. The dwellings were built of spruce logs, and a log stockade protected the town. There were barracks for the men, warehouses, a smithy, and quarters for the governor. In 1806 the Russians began to trade with the village of San Francisco, importing raw hides and tallow, and returning manufactured goods such as leather and candles.

In 1810 Captain Vasili Golovnin of the Russian navy was astonished by the interior of Baranof's rough-hewn fortress. He saw "ornaments and furniture in profusion of masterly workmanship and costly price . . . and many pictures of remarkable merit. I must confess that I badly judge in painting and could only know that in the uncultivated wild border of America there would be none except Mr. Baranof to value and understand them." There was a library of 1,200 volumes contributed by great families in St. Petersburg anxious to do what they could to "sow the seed of science in the breasts of the peoples so far outlying from the enlightenment of Europe." Baranof told the enthusiastic captain that he would be glad to exchange it all for a doctor, or the pupil of a doctor.

The doctors came. Surgical and astronomical instruments were sent from Russia. Sitka eventually had an observatory, a museum, a hospital with forty beds, three doctors, eleven apothecaries, and several schools where boys were trained in mechanics, navigation, and accounting. All this was finally realized only in the time of Governor Yanovski and his wife, "Cavalier Baranof's daughter Irina."

The man who built Sitka was a harsh administrator, energetic, domineering, of great courage, feared but respected. He enjoyed danger and hard work, heavy drinking and carousing. And he was a poet, composing songs to celebrate the New World and the strenuous life. One of Baranof's songs has been preserved in which, in crude and unliterary Russian, he quaintly mixes phrases about the glory of Russia, the simplicity of Nature, and the brotherhood of man with terms direct from the counting-house. "As soon as we saw it, we settled on this solid strip of land," he sang. "Peter the Great! If you could waken, you would see that you have not been cheated. Near the lands of tea [Japan] your descendants have taken land and live Argonauts are lured by the glitter of gilded fleece. Here there is no golden fleece, but precious gold is pouring in from all over. . . . Though Nature is wild here, and the nations bloodthirsty, we endure our sorrows and toil—for profits are important, the fatherland needs them. . . . We are not after rank or riches, but agreeable brotherhood. Yet what we have earned through striving and toil our descendants will give thanks for!" In 1818, at the age of 72, Baranof was retired. He attempted to make the long journey home, but died on the voyage and was buried at sea.

The Indians were persuaded to return to their old home on Baranof Island in 1821. A mission church, Trinity, was built into the stockade in such fashion that it could be entered from either side. The inner door was kept barred whenever the outer one was open, but in 1855 the Indians made their way into the town through the church. A two-hour battle followed in which twenty Russians and sixty Indians lost their lives.

When Robert Kennicott of the Western Union Telegraph Expedition visited Sitka in 1865 he found it a town of 2,000, with 1,500 Indians outside the fortifications. The buildings were built of squared logs washed with yellow ochre and had red metal roofs. High on the hill near the harbor stood the governor's house or "castle," a two-story frame building with a cupola. The Indian village stretched along the shore below Sitka. Outside a portcullised door in the stockade was the marketplace where trading booths were set up. Inside the town were barracks and clubrooms, warehouses, shipyards, flour mills, sawmills, and foundries casting brass, copper, and iron. There were three churches—a Lutheran, said to have a very fine pipe organ, the Indian mission, and the Cathedral of St. Michael.

On October 18, 1867, two American generals, three navy captains, and 250 enlisted men stood in the rain before the governor's house to take possession of the new American territory. The Russian flag was lowered and the American raised in its place. Salutes were fired from the ships in the bay and answered by the wharf battery. Princess Maksoutof, wife of the governor, wept audibly from a second-story window in the castle.

The adventurers who had accompanied the garrison took possession of Sitka in their own way. Within a week two saloons, two ten-pin alleys, and a restaurant were opened. Town lots were staked off and a real-estate boom got under way before it was realized that land claims were not legal without a homesteading act. The new proprietor of a sawmill instructed his subordinate to sell lumber at fifteen dollars a thousand except to the United States government and the Greek Russian church, which were to be charged twice that amount. The old residents of Sitka locked their doors at night, considering the streets unsafe.

Ugly rumors about the conduct of the newcomers in Sitka soon reached the United States. It was said that the Russians, who by treaty were entitled to American citizenship, had been driven from the town. General Halleck was sent to find out what had happened and reported that the Russians had indeed gone, but "our officers are certain that no violence was used in getting them aboard the vessels in which they departed."

On New Year's Day, 1869, a Chilkat chief was entertained by General Davis, and is said to have drunk too much. As he left the grounds he came upon a sentry. There was a skirmish in which the chief was kicked but escaped with the sentry's gun. A state of emergency was declared and all Indians forbidden to leave town. During the night a canoe put out from Sitka, was fired on, and a Kake and a Chilkat killed. Commander Meade, called on to help restore order, reported to the Navy Department, "A good deal of bad feeling exists between these Indians and the military, but their villages are remote from the sea and a man-of-war cannot get near enough to shell them."

A month later two traders were found murdered in the vicinity of Sitka and General Davis recognized this as retaliation for the Indians killed on New Year's night. He promptly equipped the *Saginaw* and sailed for the Kake country planning "to seize a few of their chiefs as hostages." But news of his plan had preceded him, and he found the coast deserted. "Nothing was left to be done except to burn their villages and canoes, which I ordered to be done. Where the Indians fled we were unable to ascertain. Want of fuel prevented us from prolonging the search but the *Saginaw* will leave here again in a few days to look after them again. . . . I do not anticipate much difficulty in bringing the trouble to a close. I can see no ground for any serious outbreak. I feel master of the situation."

This report brought a cry from the United States press to restore order in Alaska by removing the military. But the army remained master of the situation until the close of the Grant administration. By that time public opinion was strongly antimilitaristic, and Congress adjourned in 1877 without appropriating enough money to pay the men. Indian hostilities were accordingly found to be at an end and the army was reduced to peacetime standard—the Sitka garrison being among many recalled.

The white residents of Sitka believed that their life and property were endangered when the boys went marching home. But their complaints failed to impress sober Americans five thousand miles away, to whom the Indians appeared more like street urchins than fearful enemies, especially as, in the complaints, an economic interest in the presence of the troops was naively to the fore. The merchants were "discouraged," the departure of the troops had had "a damaging effect on trade." The Indians were "bold and impudent." "They get drunk and swagger about town day and night and have no respect for the rights of the whites. Indians have already begun to plunder government buildings, carrying away doors and windows and tearing down the stockade for fuel."

At the time Sitka claimed to be a town of 300 inhabitants, "most of them uncivilized and indecent," according to an army report. There were 33 American-born citizens of whom 15 were adult males, and the population was variously referred to as 15 or 300, according to the taste of the speaker. The *New York Times* chose to consider it a town of 15 in an editorial that voiced the general opinion on Alaska. "We are not told what these 15 men were engaged in doing, but it is obvious that they cannot subsist without an army to subsist upon. However, it would be cheaper to subsidize the citizens than to maintain a garrison for them, and it would be cheaper to board them at Delmonico's than in Sitka."

Undaunted, the people of Sitka carried on a publicity campaign in the American press. They reported coal and copper along Prince William Sound and described waters swarming with fish, and spoke of rich gold deposits in hard rock that needed only a little capital to be developed. Such reports, actually understatements of the wealth of Alaska, were in such glowing terms that they were not convincing. And they were embedded in strange charges which no one could take seriously from 15, or even 300 men: of "persistent efforts to decry the value of the Territory and discourage immigration," of "studied neglect by the government at Washington."

The "fifteen men" at Sitka were irrepressible. In 1879 they were fearing an "indiscriminate massacre." As this brought no response from Washington they appealed to a British man-of-war at Esquimalt to come to their aid until the United States could send help. The headline, "British Gunboat Protecting American Settlement," could not be ignored, and the revenue steamer *Wolcott* was sent to investigate. The *New York Times* sighed, "If the Panhandle could be cut off Alaska would be more symmetrical in shape and a great deal easier to govern." Dr. Elliott, a recognized authority on Alaska, having spent some time in the Pribilofs studying the seal, felt that a revenue cutter would solve everything. The savages, he explained, were compelled to live at the water's edge, and one small boat could "destroy their settlements in a few minutes and scatter the inhabitants like rats into the almost uninhabitable interior."

Captain Seldens of the *Wolcott* reached Sitka after a "boisterous passage" and reported grave danger. The Indians had examined his boat and said they could capture it if they wished. According to Captain Seldens they "openly jeered" at the cutter. They were demanding indemnity for some members of the tribe who had been killed, one of whom "drank himself to death last winter in the company of a miner." The people of Sitka had "imprudently compromised the claim" by paying one-fourth the amount asked. When the remainder was not forthcoming a sub-chief had urged massacre and plunder. But his tribe opposed him in this and he had gone off, doubtless to find other backers. The *Wolcott* sailed away to watch for the fleet of hostile canoes which by that time should have been under way. The British man-of-war remained at Sitka.

More embarrassed than alarmed, the Navy Department sent the steam corvette *Alaska,* with 15 guns and 230 men, to protect the town. Later Captain Brown of the *Alaska* reported that the "defenceless whites" had not fled the town but were planting gardens.

The *Alaska* was relieved by the *Jamestown,* commanded by Beardsley, who undertook to teach Sitkans civil order. He employed Native police for the Indians to minimize unfriendly contacts with his own men, and called a meeting of the people of Sitka to organize public opinion against the liquor traffic and to form a local government. The local government failed in ten weeks because the six dollars a month allowed for maintaining law and order did not provide a police force "of sufficient ability and courage."

John Brady, a resident of Sitka who assisted Beardsley in restoring order, had been born in the slums of lower Manhattan, had been a protêgé of the Children's Aid Society of Indiana, and later managed to work his way through Yale and the Union Theological Seminary. He came to Sitka in 1878, and with the help of Miss Fannie Kellogg opened a school in the old Russian barracks. The following Christmas Miss Kellogg married the young missionary at Wrangell, Dr. S. Hall Young, the school was abandoned, and John Brady severed his official connection with the church to become manager of the Sitka Trading Company. A year later Miss Olinda Austin came to Sitka to reopen the school. From this time on the history of Sitka paralleled the history of the Presbyterian Church in Alaska.

On the eve of Miss Austin's departure from New York, Dr. Sheldon Jackson depicted the life of the Indian woman. He had often heard of Indian women "leaving their cabins in the night and going into the forest with their little girls, where, after making a bed of leaves, they lulled them to sleep and left them to be devoured by the foxes, preferring that they should perish as innocent babes than grow up to know the degradation of womanhood. . . . It is no uncommon spectacle in Sitka to see a woman offer her own daughter for sale to any trader or person who will consent to buy her." Dr. Jackson's pleas on behalf of the Indians did more to awaken Congress to an interest in Alaska than all the petitions of the fifteen men, and the reverend gentleman succeeded in turning sympathy and good will into more solid support. Senator Vest said in 1898, "In the twenty years I have been in the Senate that distinguished divine has never been absent when an appropriation was to be made."

Sheldon Jackson's energetic life was devoted to the welfare of the Indian. He introduced the reindeer in Alaska and founded many Native schools with government subsidies and private funds which he personally had raised. He had little sympathy for fellow Christians who left the narrow way, and he understood no law beyond that of his conscience. From a missionary he became General Agent for Education in Alaska, in which office it was alleged he saw fit to spend public money as seemed to him for the best. He endorsed the mine owners in their struggle with the organized miners. Although he was reverenced throughout the United States, he was bitterly opposed in Alaska. In 1886 and again in 1899 he was indicted on charges of mismanagement and misuse of government money. The implication that he had done this for personal gain was preposterous, and he rose from such attacks more powerful and more impressive than ever.

In 1884 John Brady was made commissioner through Sheldon Jackson's influence. He was universally liked as an honest and kindly man. But in 1899, when appointed governor, he became the target for the popular opposition to Jackson, and his simplicity and unworldliness served him badly. He told Washington that the people of Alaska wanted an elected delegate to Congress because "they would like the excitement and contention of an election," and advised Alaskans not to ask for statehood until the Territory was filled "with a desirable population such as we think will come." A Republican appointee himself, he gave a coveted office to a Democrat and aligned himself with the Reynolds Company against the Alaska Syndicate.

Just as the economic center of Alaska had shifted from Kodiak to Sitka with the disappearance of the sea otter, now the discoveries of rich deposits of gold to the north made it shift to Juneau. When the Civil Code Bill was passed in 1900, Juneau was named the capital of Alaska. Governor Brady and the executive offices remained at Sitka, but in 1906 Theodore Roosevelt, acting on the report of a special investigator, Churchill, removed Brady and Jackson from office, and the new governor took up his duties at Juneau. Sitka has since been rarely disturbed by the gales of contemporary politics, and its inhabitants are content to have it so, content to preserve its natural beauty and the relics of its romantic and historic past. The principal industry is fishing. In 1936 the harbor commerce totaled 36,417 tons, valued at $5,350,000. During the 1937 season nearly 1,000 boats delivered at Sitka 7,500,000 pounds of fish, valued at three-quarters of a million dollars. The town is equipped to accommodate visitors, with retail shops, hotels and restaurants, and transportation agencies. There are four churches: Catholic, Episcopal, Presbyterian, and Greek Orthodox. The last still keeps the old Russian calendar, so that Sitka celebrates Easter and Christmas twice each year.

Modern Sitka retains so much of its Russian past that Russian maps may still be followed in wandering among its points of interest. The pier at which the steamer docks is in the same location as the old Russian dock, and at low tide the timbers of the old hulk used for a landing stage by the Russians can still be seen. On the dock was the Russian landing warehouse (burned in 1916) in which were stored tea, chocolate, snuff, spices, hides, tallow, and many other wares.

On the right upon leaving the pier the UNITED STATES CABLE OFFICE (commercial telegrams accepted) occupies the site of an old Russian fur warehouse. Next to it is a three-story building, once a Russian barracks, used as a courthouse and jail. On the right is the new Federal building, which when completed will house Federal agencies and other government offices. Beyond and behind the Federal building, on a knoll called "Keeker" by the Russians, rising abruptly from the edge of the bay, is the site of "BARANOF'S CASTLE" or the GOVERNOR'S HOUSE (grounds, reached by a stairway, open to visitors) on which stands a house (private), the property of the Department of Agriculture. The "castle" was built in 1837 and burned in 1894. Built of spruce logs bolted to the rock, this two-story building with a cupola was one of three or four buildings consecutively erected on this naturally fortified site, commanding the harbor. Here were given lavish dinners, at which as many as a hundred guests were seated, among them the wives and daughters of officials, in muslin, kid gloves and fans, the managers of the company in the gold lace of navy officers, their secretaries and clerks in the uniform of the Ministry of Finance, priests and bishops in their clerical dress, and Yankee whaling captains and mates in their somber broadcloth. Here Baranof, though he never lived in the building, built two rooms for his pictures and books. Four seal-oil lamps with reflectors made the cupola the first lighthouse on the Pacific. Before the "castle," Prince Maksoutof transferred Russian America to the United States on a fall day in 1867.

To the left of the hill, an open space that was the parade ground of the Russian and later the American garrisons is today occupied by the large three-story building of the ALASKA PIONEERS' HOME, established in 1913. The Home first occupied the abandoned buildings of the United States marine guard, and in 1914 the former residence of the governor of Alaska was added to these. The buildings were razed and work completed in 1935 on the present $250,000 concrete structure, which houses about 175 pioneers of Alaska—men who beat down a wilderness, who lived always in the presence of death, and did not provide for their own old age.

The Pioneers' Home dominates the harbor. Left of the Home is a Federal public school, one of about 100 day schools for Natives operated in Alaska by the Federal government. Left of the school runs, along the waterfront, a street on which are the fish pier, warehouses whose foundations date to Russian days, a pontoon plane landing, the Sitka Cold-Storage Company, and the buildings of the Sitka Wharf and Power Company. The waterfront street continues left to the Indian village, which smells of Indian celery and dandelion and drying salmon. The frame houses are decorated inside with an odd conglomerate of Christian emblems, Indian tribal figures, and Chinese wares, these last relics of Yankee trade. In front of the house of Nuk-Wan, a famous canoe-builder, is a white carved statue of a bear, Nuk-Wan's crest. His widow had the statue carved for her husband's grave, but the priest, scenting heresy, persuaded her to keep it near the house.

Straight ahead from the steamship dock through the center of town runs Lincoln Street, the Governor's Walk of Baranof's day. Along this thoroughfare, the principal street of the town now as in Russian days, Indian women spread out articles of their own manufacture on steamer days for sale to tourists. Many of the original Russian buildings along this street have disappeared or have been repaired beyond recognition, but some of the shops still occupy old Russian structures. Among these, on the right, is the SITE OF THE FIRST CHURCH IN SITKA (1816) marked by a cross. Next to it is the lot formerly occupied by the Lutheran church, built in Etolin's day, in which the first church service was held after American occupation.

Across the street, on the left, is the CATHEDRAL OF ST. MICHAEL (open during steamer hours; adm. 50 cents, which goes to the parish fund) built in the shape of a Greek cross, of logs covered with clapboards, with a green roof and a green carrot-shaped belfry surmounted with a cross, a lower green turnip-shaped steeple over the apse. Sitka had no church building until 1816, but it was never without church services, and missionary work was done among the Indians from the first. In the early years Baranof stood godfather to as many as were converted and paid the mission for their baptismal presents. An entry in the church records, August 24, 1808, reads, "By grace of God, twenty-one pagans were admitted to the Orthodox Russian Church today with great ceremony. The baptismal presents on this occasion were furnished from the store of the Russian America Company and Mr. Baranof donated twenty-one silver rubles to the mission fund. Three of the persons baptized this day were found to have been Christians over two years. They were made to return their presents."

In 1812 the sloop-of-war *Neva* sailed for Sitka carrying clergy and many costly gifts from the Emperor. After its long journey of months at sea, it struck and sank off the shore of Mt. Edgecumbe. A few survivors reached the town and the precious ikon of St. Michael was washed ashore. A church was built in 1816 and richly furnished by Baranof and others.

The present cathedral was begun in 1844 and dedicated in 1848. It was the fourth church in Russian America—the first had been built at Kodiak in 1795, the second at Unalaska soon after, the third at Sitka in 1816. Its chime of six bells, the smallest weighing 75 pounds and the largest 1,500, was the gift of the Church at Moscow. On feast days and holy days, here at the easternmost edge of the Russian world these bells echoed the ringing of all the bells in Russia. The belfry clock was made by the missionary priest, Father Veniaminof.

The interior has three sanctuaries and three altars. The center sanctuary, the largest, is dedicated to the Archangel Michael. Separated from the main body of the church by a partition is the episcopal cathedral, an elevated platform. The partition is ornamented with twelve ikons, or holy paintings, covered with plates of silver repoussé. The chapel on one side was dedicated in the name of St. John the Baptist by Prince Alexander Nevsky. The chapel on the other is dedicated to Our Lady of Kazan, and has the famous painting of the Madonna and Child framed in silver repoussé. The vestments and vessels are rich and resplendent—the altar-cloth of gold was presented to the church by Baranof.

The burden of keeping up and repairing the church falls on the parishioners, as the Soviet government does not contribute to its support as did the Czar's régime. Among the parishioners are a very few remaining Russians, but most of them are creoles and Natives.

Straight ahead, or east of St. Michael's, is a residential district. Here the stockade ended, turning north uphill, and under its protecting shadow were the foundries, mills, and kitchen gardens. A modern sawmill marks the site of the old, at the mouth of the outlet to Swan Lake.

On the left is the PUBLIC LIBRARY, in 1842 an orphanage. Baranof's 1,200 volumes were lost some time after the American occupation, but whether they were carried off by the Russians, who left in the first year of army administration, or by the Indians when they were demolishing the stockade for fuel, is not known.

Beyond the public library is the Episcopal church, St. Peter's by the Sea, built by Bishop Peter Trimble Rowe in 1899, and for many years considered the pro-cathedral of Alaska. Bishop Rowe was born in

1856 and was sent to Alaska in 1895. In 1938 he was still covering his wide territory by plane and by dogsled, fulfilling the duties of his office.

Beyond St. Peter's, on the left, is the SHELDON JACKSON SCHOOL. The octagonal building farthest east houses the SHELDON JACKSON SCHOOL MUSEUM (open during steamer and school hours; admission 25 cents) in which are many interesting relics of Native and Russian life, and where handloomed textiles and curios made by the pupils are sold.

This school, operated by the Presbyterian Board of National Missions, is the only accredited private school in Alaska offering secondary education to the Natives (for the two government schools, see Part II, 1, Wrangell, and Part II, 5, Eklutna). It was founded in 1878, and Mrs. McFarland's school at Wrangell was combined with it in 1884. Students are drawn from all parts of the Territory, representing all of the Native ethnic groups, and coming from about two dozen towns and villages from Ketchikan to Barrow. The school gives a junior-senior high school course of grades 7–12, accredited by the Northwestern Association of Colleges and Secondary Schools. In addition to the usual academic subjects, there is strong emphasis on vocational training. Through weekday Bible classes for each grade, daily chapel and prayer groups, and a variety of student organizations, the students are given definite training for religious leadership. The *Verstovian* is a monthly bulletin published by the school.

Opposite the school, on the right, is the BLARNEY STONE (corruption of Baranof?) on which the aging Baranof is traditionally supposed to have sat and looked out over the bay.

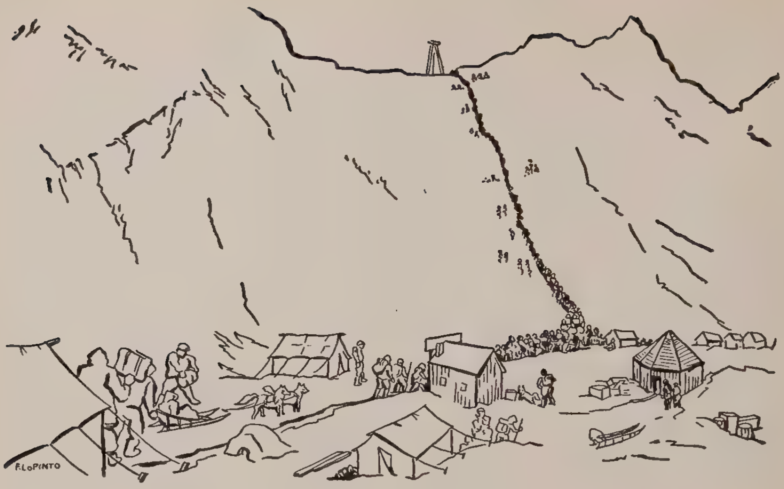
Governor's Walk now becomes Indian River Road, a translation of the old Russian name, that leads to SITKA NATIONAL MONUMENT (free). Beside the entrance to the park is a medallion set into a rock, dedicated to Elbridge W. Merrill, a Sitkan artist. The monument covers about 57 acres. Although reserved as a public park by President Harrison in 1890, it was not until 1910 that it was established as a national monument by presidential proclamation. It includes the site of the ancient village of Kik-Siti Indians, who fortified themselves here in 1802 after their massacre of the Russians, and defended themselves until the decisive "Battle of Alaska" in 1804. The graves of a Russian midshipman and six sailors killed in this battle are within the monument boundaries.

Indian River Road follows the curve of the beach through a forest of spruce and cedar with a dense undergrowth. Set at intervals are sixteen tall, beautifully carved totem poles of Tlingit and Haida Indians, collected at different points on Prince of Wales Island, and the principal objects of interest in the monument. Several of these poles are unequaled as relics of the work of the geneologists of these Alaska tribes. They are of red cedar, gayly painted. The Interior Department is making every effort to preserve the poles, having the carvings restored by Indian workmen where vandalism has occurred, and repainting them as nearly as possible in their original colors. One of them is the house totem of Chief Son-i-hat of Kasaan. During the summer the park is not dark until after ten o'clock, and even later a cloudy sky will cast a theatrical glow over the forest and bring the totems to life. An interesting feature of the monument is the witch tree, where Indians formerly held trials for witchcraft and on which they hanged their victims. Near the sea is a restored Russian blockhouse built of timbers from the original structure. At the southern end of the park parts of the foundations of the old Tlingit fort can be found among the fern and wild flowers. A rustic bridge over Indian River leads to Mt. Verstovia.

Retracing Indian River Road to the public library, Davis Road meets it and turns north. This military road, built to haul timber from the forest, was named for Gen. Jeff C. Davis, commander of the post, and leads to the military cemetery.

Retracing Indian River Road to St. Michael's, a street turns north along the line of the old stockade. On a little knoll above the town was formerly a teahouse, surrounded by bordered walks and a public garden. Today the area is densely overgrown with brush and weeds. Farther along, on the left, were formerly three Russian blockhouses in the north wall of the stockade. Back of the site of one of the blockhouses is the GRAVE OF PRINCESS AGLAIDA MAKSOUTOF, who had been dead five years when her successor wept at the lowering of the Russian flag. The marble slab over the grave is the gift of an American lieutenant. At the end of the walk is the modern RUSSIAN CEMETERY, and in its center a platform from which there is a good view of the harbor, the islands, and Mt. Edgecumbe. Returning toward the steamship pier, a back street behind the Pioneers' Home leads past the Federal public school, to where the Indian village begins, stretching along the harbor front. The great Indian community houses have long since disappeared, as have the huge log canoes, the latter replaced by motor launches with such names as *Bundle of Boards* and *Bubbles.*

In launches such as these, interesting trips may be made to the environs of Sitka. MT. EDGECUMBE (3,467alt.), discovered to be on an island by Captain Portlock in 1787, and first ascended in 1804, may be reached and climbed in a single day. Its crater, some 300 feet deep and three miles in circumference, is nearly filled with snow. Near it is ST. LAZARIA ISLAND, a natural bird rookery. *St. Lazaria* was Chirikof's name for Mt. Edgecumbe. OLD SITKA, 6 miles to the north, is reached by launch, but when the six miles of the Sitka Highway are completed, this spot will become easily accessible by automobile. The Forest Service has tentative plans for constructing a log lodge here for the use of the public (in which will be placed maps showing Old Sitka as it was), for refurbishing the grounds, and for locating the former buildings and stockade with markers. A series of excavations by the CCC under the direction of the Forest Service, completed in 1935, brought to light a total of 696 relics, the great majority of Russian origin. The location of the old stockade, indicated by post-holes, was found and recorded. At a greater depth than the Russian relics were Indian implements, proving that before Russian days an Indian village stood there. By far the most important discovery was an iron plate nine inches square on which was riveted a bronze cross and two strips of bronze: one extending almost across the plate with an inscription in Russian reading, "Country in Possession of Russia"; the other and shorter strip inscribed, "No. 12." So far as is known, this is the only one of thirty copper shields made by Governor General Jacobi of Eastern Siberia in about 1785 and entrusted to the navigators of the Shelikof-Golvokof Company to place on newly discovered territories in Alaska. There is a definite record of shields numbered 7, 8, 9, and 10 having been placed on Montague Island, Nuchek, Yakutat, and Lituya, but thus far none of these has been recovered. MT. VERSTOVIA (3,216alt.), reached either on foot through the Sitka National Monument or by boat, was so named because it rises nearly to the height of a Russian verst (3,500 feet). From its summit (use guide—trail not well marked) there is a splendid view of the harbor and its islands (of which it has been said that they could be mapped only with the liberal use of a pepper-shaker), and of glacier-clad peaks to the east rising for a hundred miles. Northward can be seen on clear days Mt. Crillon (12,725alt.) and Mt. Fairweather (15,399 alt.). REDOUBT, 10 miles southwest of Sitka, reached by launch, is the site of a Russian fishery, where Globokoe, or Deep Lake, formed a live fish reservoir. Here also was a flour mill that ground wheat from as far south as California. SITKA HOT SPRINGS at GODDARD (p.o., 10 pop.), 4 miles south of Redoubt and 15 miles from Sitka by launch, is a favorite health resort. Here a modern, comfortable hotel is owned and operated by the family of Dr. F. L. Goddard at the site of the five natural hot springs on Baranof Island to which the Russians frequently resorted. Guests may live in the hotel or in separate cabins, which like the hotel are heated by the natural spring water, with an average temperature of 145°. All modern conveniences, such as electric lights, radio, electric refrigeration, and electrical appliances, are available. Vegetables served are grown in the vicinity, and fish, taken near by, are served in season. Trout fishing, hunting, and mountain climbing are favorite recreations. The spring water contains iron, chloride magnesia, sodium, sulphur, lithium, potassium, and radium. The Territorial legislature, in 1939, appropriated $20,000 for the purchase of the springs for the use of the Pioneers' Home. BARANOF (p.o., 15 pop.) is a cannery 25 miles east of Sitka. CHATHAM (p.o., 11 pop. est. 1933) is on Chatham Strait, 65 miles northeast of Sitka. PORT ALEXANDER (p.o., 107 pop.) is a fishing village on the south point of Baranof Island. PORT ARMSTRONG (100 pop. est. 1933) is a cannery ten miles north of Port Alexander.



2. THE YUKON TRAIL

Skagway — Whitehorse — Dawson — Fortymile — Fort Yukon — Tanana—Nulato—Holy Cross—Marshall.

JUNEAU TO SKAGWAY BY OCEAN STEAMER

LEAVING JUNEAU, the steamer takes the Gastineau Channel southward as far as the southern end of Douglas Island, where it enters Stephens Passage and heads northward, with Admiralty Island on the left. Passing the north end of Douglas Island, Mendenhall Glacier is in the distance to the right. Leaving Shelter Island on the left and Sentinel Island lighthouse on the right, the steamer enters Lynn Canal, which extends 80 miles northeast from Chatham Strait, and was explored by Vancouver in 1794, who named it for his birthplace in Norfolk, England. The channel is filled with islands and hidden rocks; the shores are timbered mountain slopes with an occasional bare peak, broken here and there with a sandy beach where a river valley opens back to lake or glacier. Lynn Canal extends for about 55 miles to Seduction Point, where it divides into two arms, Chilkat and Chilkoot inlets. On the left or west, at the entrance to

Chilkat Inlet, is DAVIDSON GLACIER, an outlet of Muir Glacier, shimmering bluish green in the distance, and visible for 50 miles. The steamer follows Chilkoot Inlet, on the right or east, for about 12 miles in a northwestern direction, the channel having an average width of two miles. Again the channel divides, and the steamer follows the eastern and principal arm, Taiya Inlet, which has an average width of one mile, northwestward for about 13 miles. On both sides are high mountains with glaciers in their gorges, and innumerable waterfalls and streams.

Steamers touching at Haines usually dock at CHILKOOT BARRACKS, a scant mile south of Haines, formerly Fort William H. Seward, and the United States' most northerly army post. A 42-mile highway connects the barracks with Pleasant Camp on the international boundary. HAINES (p.o., 344 pop. largely Native) is on Chilkat Peninsula, near the head and on the west side of Chilkoot Inlet. From here Davidson Glacier sparkles in the sun, and to the north can be seen the famous peaks of the White (2,890 alt.), Chilkoot (3,500 alt.), and Chilkat (3,100 alt.) passes. Haines was once a trading post for the Chilkat and Interior Indians. The first white man to establish himself here was George Dickinson, agent for the Northwest Trading Company, who came in 1878. In 1881 the Presbyterian missionary S. Hall Young founded Willard Mission, later changed to Haines Mission. In 1884 a post office was established under the name Haines, although the place was known at the time as Chilkat.

Haines today is the outlet for the Porcupine mining district, and wagon roads connect the town with various camps. The principal local industries are fishing and fur farming. There are public schools for white and for Indian children and the Presbyterian mission maintains an orphanage for Indian children. There is a post of the Alaska Native Brotherhood, a benevolent organization of Natives, here. In Pyramid Harbor, 2 miles from town, is a salmon cannery open to visitors.

The country within a radius of fifty miles of Haines was originally the home of the Chilkats, whose name is given to the ceremonial blanket used by Tlingit tribes (see Part I, 1, Juneau). At one time the name Chilkat meant the tribes living west of the Chilkat River. Those to the east were called Chilkoots. Ten miles above the river mouth is Chilkat Peak (6,580 alt.). KLUKWAN, or Chilkoot (97 pop.), is a Native settlement on Chilkat River 25 miles northwest of Haines, its post office. The name is a Chilkat word, meaning Old Town. There is a Federal school for Natives here.

An early description of Alaska, printed in April, 1867, before the purchase treaty had been ratified, made a clear distinction between the coastal and interior inhabitants of the country. The former were described as "industrious, peaceable, and teachable," and the latter as "peaceable." The industrious and teachable Chilkats had quickly learned the arts of the middleman. The marten skins, sold to the white man for a few cents, were bought from the Indians of the Interior for shockingly near nothing. Both the Indians and the white men knew this and were anxious to get at each other, but the Chilkats held them apart, concealing the mountain passes from the white traders and intimidating the Interior Indians with their superior, civilized weapons. In 1880 Edmund Bean and a party of miners found the Chilkat Pass and white men began to make their way across the great divide. There were strange stories of what might be seen in the wilderness beyond. Not only were mastodon bones found there, but, according to one story, a terrified Indian came running into camp one day saying he was being chased by an animal so large it hid the sun, and the white men who returned with him to investigate saw tracks in the snow that were two feet long and eight feet apart!

The Chilkats were friendly to the white men when this did not hurt their trade with the Interior. In 1879 the naturalist John Muir and the missionary S. Hall Young entered Chilkat River on their return from Glacier Bay. They were halted by shots from a sentry, and explained that they were "a preacher chief and an ice chief" who wanted to talk. Their message was relayed to the village and men were sent down into the water to carry the canoe and its occupants to the chief's house. A great feast followed. Young preached for hours at a time, and when he was too tired to say more, Muir talked. When both men were exhausted the Indians made speeches. News of this meeting spread through the country, and Indians came great distances to see and hear. They stripped boards from the building where Muir and Young were lodged and peered down on them from the smoke hole in the roof. Finally Shathitch, head chief of all the Chilkats, arrived from Klukwan, twenty miles away. He was wearing a magnificent robe on the back of which was printed, "To Chief Shathitch from his friend William H. Seward." During the feast Muir and

Young heard the crying of a newborn child whose mother was dead. The white men fed the hungry infant condensed milk and left their supply for it. Seven years later, the Chilkat boy whose life had been saved was sent to the Christians at Wrangell by the unconverted Chilkat tribe.

SKAGWAY (p.o., 492 pop.) is at the head of Lynn Canal on Taiya Inlet at the mouth of the Skagway River. The name is a Native word said to mean "home of the north wind." Dwarfed by the hills around it, the triangle-shaped town lies like a wedge against the icy mountains of the White Pass. Skagway is the terminus of the White Pass and Yukon Railway, and a port of entry for Canada. It is a shipping center and supply point for miners and trappers of the Yukon and Klondike districts.

In 1897 there were two routes from Skagway to Dawson and a traveler could take the White Pass to Lake Bennett, or the Chilkoot from Dyea to Lake Lindeman. The White Pass crossed dangerous swamps on the farther side of the mountain, and most prospectors chose the Chilkoot. This trail reached an elevation of 3,550 feet and was so precipitous as to hardly be a "pass" at all. In Switzerland it would be classed as a dangerous mountain climb. But 25,000 people are supposed to have made it in 1898. All of them carried packs, and some were traders with large outfits.

The route from Skagway to Chilkoot Pass leads through mosquito-infested flats to the now deserted town of Dyea. The fifteen miles from Dyea to the pass proper is along a narrow river valley, gouged out of mountains that rise to great heights on either side. The trail crosses the river fifteen times. Vegetation is sparse and ceases altogether, except for a few alders, as the trail ascends the mountain. At the timber line, a sharp turn to the right leads to Sheep Camp. From here the climb took six and a half hours, the ascent so steep that 1,500 steps were cut in the ice.

In April, 1898, an avalanche of snow buried the line of climbing men from Sheep Camp to the summit. The slide began as blue smoke far up the mountain and swept across the trail in a blinding storm of snow and loosened rock. The men waiting in the camp below worked in relays to recover the victims. But the men at Dyea had little time for disinterring the certainly dead, and many bodies were never found.

Ezra Meeker who crossed this pass in '98 with supplies for the Interior wrote, "Frequently every step would be full while crowds jostled each other at the foot of the ascent to get into single file, each man carrying from one hundred to two hundred pounds on his back. . . . I reached Dawson with nine tons of my outfit and sold my first potatoes at $36 a bushel."

The last half mile of the climb is at an angle of 45 degrees. "As we looked up that long trough of glistening ice and hard-crusted snow, as steep as the roof of a house, there was not one of us who did not dread the remainder of that day's work," wrote Frederick Funston, a United States army general who crossed the pass in '96. Three hours later the "narrow crest of snow and ice that divides the valley of the Yukon from the sea" was reached. Standing at the summit, "behind us and to the right and to the left was a jumble of ice peaks, and below the zigzag trail up which we had laboured so breathlessly. But these things were of small interest and our gaze was fixed ahead, where stretching away in billows of spotless white was the valley of the great river of the north. There was neither rock nor tree nor shrub nor any living thing to break the monotony of that huge blanket of snow, the wooded shores of the lakes being concealed by a range of low hills."

The summit of the mountain pass was a pause, a breathing space, but not the end of danger. Across the glacier ice was Lake Lindeman, and from there travel was largely by water. But the water had its own hazards. Probably the most dangerous part of the journey was seventy miles beyond the lake. There the river closes in abruptly, pours through a narrow, dark channel and out over a series of rapids. Together, the canyon and rapids make five miles of seething water whose foaming mane has given the name Whitehorse to rapids and town.

On July 29, 1900, the White Pass and Yukon Railway was completed. One hundred and eleven miles of track now connected the port of Skagway with Whitehorse and the Yukon—salt water with fresh—and the journey to the Klondike was no longer hazardous for men or freight.

The railway was financed by Close Brothers of London. Michael Heney, a Canadian of Irish descent, had the engineering genius to see the possibility of this road, and planned the route. E. C. Hawkins was the engineer in charge who solved construction problems. The work was done in two years. The road was laid along mountain precipices, across canyons, glaciers, and swamps. At one place a lake was drained, and the rails laid across its bed. Supplies had to be shipped from Vancouver or Seattle, a thousand miles away.

Among the heroes of the Klondike days were the men who built this railroad and linked the Yukon to the Pacific. They worked suspended from the canyon sides by ropes, the glint of water far below them. Arctic blizzards brought snow blindness. But work was interrupted only twice—when a gold rush at Atlin drew off 1,500 men in a few days, and when there was a strike during construction. Dr. Whiting, chief surgeon during construction of the railroad, and intimate friend of Michael Heney, says the strike was the work of "degenerate characters with criminal records in the states." The leader, "a powerfully built young Englishman," was caught. Dr. Whiting brought a rifle butt down on his head, leaving him "an unconscious, bleeding mass, helpless and harmless." The leader was imprisoned and "most of the men willingly returned to work, the agitators being weeded out."

Skagway today has telephone service, city water, and electricity. There is a modern school system and a Catholic mission for Indian children. There are several churches and fraternal organizations including the Arctic Brotherhood, the Eagles, the Elks, and the Masons.

PULLEN HOUSE, standing on the site of Moore's cabin, is a modern steam-heated hotel accommodating a hundred guests, operated by Mother Pullen, one of the early pioneers in Skagway. In '97 Skagway was a town of between 10,000 and 20,000 people, and according to "Scotty" Allen, "There was only Moore's cabin on the beach and a string of tents put up in a semicircle on either side, which had sprung up over night. Craft of every description from small boats to ocean-going steamers were dumping into the make-shift village a crazily mixed mass of humanity under the worst conditions imaginable." Among the "mass of humanity" dumped that September was Harriet Pullen, a thirty-seven-year-old widow from a Wisconsin farm, with four small children to support and seven dollars in her pocket. The early days in Skagway are seen at their best through Mrs. Pullen's eyes. She first discovered a great demand for apple pies. By February she had "built" enough pies to pay the freight on seven horses for which she had sent home. The harbor was overcrowded and the ship carrying the horses could not dock. The animals were walked off a plank into the water where Mrs. Pullen met them with a rowboat and towed them ashore. The harnesses had been stolen, and so the animals were rented out until they had earned enough to pay for new ones. Then Mrs. Pullen began trucking, carrying goods from Skagway to the White Pass and Chilkoot trails. In time she had a restaurant in town, and a truck farm and forty head of cattle at Dyea. Mrs. Pullen outlived two of her sons, one of whom, a West Point man, was cited several times for bravery during the World War. Today three rooms in Pullen House are set aside as a museum. Here may be seen the badges of honor won by Daniel Pullen, as well as Indian relics and souvenirs of the early pioneer days. Mrs. Pullen has many keepsakes of Soapy Smith—his roulette and faro tables, gun, iron knuckles, oil paintings, badge, watch, and first tombstone.

Soapy (Jefferson Randolph) Smith was Alaska's great bad man. He looked the part, mounted on a white stallion, his black beard cut in a Vandyke, wearing a white silk shirt, large diamond stickpin, and wide sombrero. He began his career in Alaska by wrapping a cake of soap in a five dollar bill in the plain sight of everyone and selling the package (which did not contain the five dollar bill) for one dollar. He later "protected" the dance hall girls and robbed returned Klondikers of their gold. During the Spanish-American War, Soapy, wanted by the authorities in many states in the Union, got himself made recruiting officer at Skagway. A great many men enlisted in "Smith's Guard," but were kept busy in local matters, and none left Alaska. The outraged citizenry finally met to organize against the gunman. Soapy heard of the meeting and set out to attend it. A guard, Frank Reid, drew his gun on Soapy, and both were killed. Reid's tombstone is inscribed, "He gave his life for the honor of Skagway." Soapy's friends at his funeral remembered his kindnesses to dogs and children and repeated his aphorism, "The way of the transgressor is hard—to quit." In Skagway harbor today, a painted likeness of the racketeer's head is seen on a mountain jut, called Soapy Smith's Skull. His gambling parlor is now the property of Martin Itjen, who has carefully restored its 1898 appearance and maintains it as a "museum," with many famous characters present in effigy.

Martin Itjen is also an early pioneer. He worked on a construction

Transportation

THE usual way of reaching Alaska is to take the Inside Passage among the islands of the Alexander Archipelago as far north as Juneau, and from there cross the Gulf of Alaska to Prince William Sound. Even after airplane transportation has been fully developed and the International Highway has been laid, many tourists will want to travel by the Inside Passage. The tour is a very beautiful one and includes the principal industrial cities of Alaska.

Inside Alaska, the chief means of transportation is the plane, which has supplanted the dog team for long-distance runs. In the northwest and the Interior the dog team now supplements the plane, carrying passengers and freight from the landing points as automobiles do elsewhere.

The Alaska Railroad from Seward to Fairbanks follows the valleys of the Susitna, the Nenana, and the Tanana, serving gold mines, coal fields, and a rich farming area. This is the only route to Mt. McKinley National Park. The railroad bed runs along mountain sides, over high bridges and trestles and forms a complete loop above Placer River. The loop is in glacier country, and two miles beyond Placer River a glacier comes within three hundred yards of the track. The twin peaks of Mt. McKinley, sunlit at ten-thirty in the evening, are visible through a hundred and fifty miles of the route.

There are eleven thousand miles of roads and trails in Alaska, but less than a quarter of this mileage is suitable for automobile traffic. Good roads exist in and around the principal cities, but the only system of connecting highways which totals more than a hundred miles radiates from Fairbanks. The Richardson Highway, 370 miles from Valdez, the Steese, 160 miles from Circle, and the Elliott, 85 miles from Livengood, meet at Fairbanks.

Tourist Steamer

ABOVE: *The Inside Passage*
BELOW: *Fishing Fleet*

ABOVE: *Entering Ketchikan* ABOVE: *Lake Spenard*

BELOW: *Bartlett Glacier from the Alaska Railroad*

ABOVE: *Mt. McKinley at Night*
BELOW: *Loop District on the Alaska Railroad*

Hurricane Gulch Bridge

Knik River Bridge

ABOVE: *Old and New in Transportation*
BELOW: *The Dog Team*

Highway Near Fairbanks

gang on the White Pass and Yukon Railway, and later on the telegraph line between Bennett and Dawson. He is the "designer, builder, owner, and driver" of the "Skagway Street Car," and conducts a two-hour sightseeing tour around Skagway. The "Skagway Street Car" was built in collaboration with Henry Ford and is the first wonder of the sight-seeing trip. After the visitor has become acquainted with this he will be shown all the colorful parts of Skagway with a flow of explanatory narrative. There are Jeff Smith's parlor, the graves of Jeff and his slayer Frank Reid, and the 300-foot falls named in honor of Reid. There are Pullen House, and the Catholic mission. Mr. Itjen also points out Blanchard's famous flower gardens —"the best in the north and a great many other places. They have taken prizes for the best flowers—even in California"; the tame fish—"They eat right out of your hand"; and the railroad shops—"All the people in this town who do not work the tourists, work here."

There are numerous camping places in the vicinity of Skagway. These may be used for hunting (goats, bear, and mountain sheep) or fishing (salmon, trout, and grayling) or for mountain or glacier climbing. SWISS CHALET (40 minutes' walk from town along the mountainside to an altitude of 1,500 feet) is a building of roughhewn timbers equipped with cooking utensils and food supplies. It will accommodate more than a dozen guests for the night and is an excellent start for climbing MT. DEWEY (6,000 alt.). BURRO CREEK (15 minutes by launch across the bay from Skagway) is another excellent camping spot at the foot of CARTER MOUNTAIN (4,700 alt.). Five miles from town by train and an hour's walk over a broken trail is DENVER GLACIER, an arm of the Taku, which may be climbed with the help of guides.

At Skagway was founded in 1899 the fraternal organization, The Arctic Brotherhood. Captain William A. Connell of the vessel *City of Seattle* organized a group of his passengers as the Brotherhood, while lying in the harbor of Skagway during the winter of that year. The order was made permanent at a meeting held in Skagway, and local chapters were established in practically every town of Alaska.

DYEA, five miles across the flats from Skagway, was once the camp of 10,000 gold seekers, with their mules and possessions. In June, 1898, the "Dyea Baseball Club, Champions of the North" defied Soapy Smith's men to meet them in open combat on the diamond.

Today Dyea is a ghost town with one solitary inhabitant and a square mile of homes and business houses.

SKAGWAY TO WHITEHORSE BY THE WHITE PASS AND YUKON RAILWAY

The Yukon is one of the largest rivers of the world and the largest and most important river in Alaska. It rises in Yukon Territory, Canada, flows across the international boundary and through interior Alaska, at one point crossing the Arctic Circle, and empties through a wide delta into Norton Sound on the Bering Sea. During the open season (June 10 to October 5) the river is navigable from Bering Sea to Whitehorse, a distance of 2,000 miles. The White Pass and Yukon Railway covers the 110 miles between Skagway and Whitehorse and is open all year. The journey from Whitehorse to Dawson is made by river steamer.

During the gold rush "the Yukon" did not mean the river itself so much as the country drained by its headwaters, or what is now Yukon Territory. Small quantities of gold were found in this district as early as 1850, and by 1895, between 500 and 1,000 men were prospecting along its creeks. In 1897 George Carmack made his fabulous strike on Bonanza Creek. A year later there were between 30,000 and 50,000 people in the Yukon—Jack London, Robert Service, Rex Beach among them. By 1900 the rush had passed, a railroad had been built, and "the old days" were gone. But the trail of '98 is preserved for all time in firsthand descriptions of icy mountains, swift shallow waters, men sprawled dead beside the carcasses of horses on the trail or face down on the main street of a boom town after a drunken fight. Legend, as always, has preserved picturesque and violent exploits, and left largely unsung the modest and less colorful saga of the majority who built the Territory by their toil.

Leaving Broadway Station in Skagway, the railroad passes through the town to the old White Pass trail, the deserted White Pass City where the gold seekers camped before starting up the canyon, and on over Dead Horse Gulch where pack horses, overtired and overburdened, fell from the precipitous cliffs into the canyon beneath. At Rocky Point the railroad crosses the old trail. Rising 2,887 feet in 20 miles it reaches White Pass, the international boundary. From here the wild and rugged scenery of the first twenty miles gives place to the gentler contours of foothills. The trail descends by easy slope to 2,158 feet at Bennett, and then keeps a level course to Whitehorse.

Twelve miles beyond the boundary is LOG CABIN. This was once the headquarters for the mounted police in the Yukon, and is now the winter transfer-station for the Atlin mining district. Seven miles beyond Log Cabin, to the west of the railroad, can be seen Lake Lindeman, the end of the Chilkoot trail. A mile beyond is Lake Bennett and the end of the White Pass trail.

BENNETT (p.o.) was a town of several thousands in the boom days. Here the prospectors could buy a boat for fifty-five dollars or make their own of sawed lumber at seventy dollars per thousand feet, for the difficult journey down the Yukon to Dawson. Today empty cabins, stranded boat hulks, old diggings, and a log church on the hill remain to tell the story. The train waits at Bennett to give the passengers time for lunch and then continues, running along the lake shore for 26 miles. Snow-capped mountains are reflected in the blue water, and jagged rocks spot the shore. Unannounced, at PENNINGTON, 52 miles north of Skagway, the train crosses the boundary of British Columbia and is in Yukon Territory.

CARCROSS (p.o., 300pop. est. 1938) is at the north end of Lake Bennett and the first town reached in Yukon Territory. Between Lake Bennett and Lake Nares is a shallow stream two miles wide, a natural ford used by roaming herds of caribou. The town's name, a contraction of Caribou Crossing, was given it in 1904. Carcross is the transfer point for the Atlin mining district. The town has a good airport and a hotel. The principal industries are mining, fishing, and fur farming. Silver, red, and black fox are bred.

The first white men who came into the territory found a village of Tahk-Leesh, or Tagish Indians at the crossing. The Natives inhabiting the inner slopes of the coast range and the headquarters of the Yukon were known to the whites as Interior, Wood, or Stick Indians. The whites found them a friendly but "miserable, dirty, and dejected people," and they were held in great contempt by the coastal tribes. Most of the Interior Indians were Athapascans; but the Tagish, living along the Lewes River, were a Tlingit tribe. Captain Raymond, charting the Yukon in 1870, commented on the prevalence of disease among these headwater Indians and attributed it to "their reckless exposure to the severity of the climate." He considered their condition alarming, as without the assistance of the Indians the profitable prosecution of the fur trade was impossible.

Frederick Schwatka, coming into the country in 1883, found a large settlement of Tahk-Leesh at the northern end of Lake Bennett. He observed that their standard of living was much lower than that of other Indians. Although hunters, they traded their furs and were poorly clothed themselves. They knew the advantage of trading directly with the white men, but were too weak to force a passage to the sea. Most of them lived in terror of the Chilkats. One boy refused to take "a double-barreled shotgun, a thousand rounds of ammunition, a gold watch, two sacks of flour, and a camp stove" in exchange for a pair of shell earrings, because he had got these from a Chilkat. Schwatka cites as further evidence of the subjection of the Tahk-Leesh that they used Chilkat place names and not their own when speaking to a Chilkat. He also mentions a Tahk-Leesh who stuttered, the only Indian he had ever seen with an impediment in his speech. Schwatka was born at Galena, Illinois, in 1849. After participating in the search in the Arctic for the Franklin expedition from 1879–80, he became in 1883 the first white man to explore the entire length of the Yukon River, describing the trip in *Along Alaska's Great River* (1885). The story of his expedition of 1886, instituted by the *New York Times,* is told in *A Summer in Alaska* (1892). He studied law and medicine, and had considerable talent as a writer, apparent even in the official government reports of his expeditions. He died in 1892.

At Carcross today is the Chootla Indian Residential School, conducted by the Episcopal church with government aid. Connection is made at Carcross for Atlin, the gold-mining headquarters of northern British Columbia. During the summer the trip is by steamer on Tagish Lake and Taku Arm; in winter it is made by stage.

ATLIN (p.o., 800pop. est. 1938) is on the eastern shore of Lake Atlin. Its name means "big lake." Beyond is the Indian village, a line of log cabins fronting on a board sidewalk. Atlin is the center of a rich mining district of gold, silver, copper, and lead, and is the supply point for a larger district. Near by are mineral springs. The town was established in 1898. It has an Anglican and a Catholic church, public grade and high schools, and the St. Andrews General Hospital. The *Atlin Miner,* a weekly newspaper, is published here. Two hotels accommodate tourists. There is a registered seaplane base and an emergency landing field.

LAKE ATLIN, 100 miles long and three to ten miles wide, is the largest lake in British Columbia. Its name is said to mean "lake of storm." At its southern end is the great LLEWELLYN GLACIER. Steamboats run from Atlin to the foot of the glacier, which can be climbed to the summit in safety. Bear, moose, mountain sheep, and caribou are hunted in the near-by mountains; and trout, salmon, and herring are found in the lakes.

DISCOVERY, 8 miles from Atlin, where gold was found in 1898, is reached by stage. Here placer mining is still carried on, and the simpler methods of rocking and sluicing may be seen.

Forty miles beyond Carcross the railroad meets the old trail at Miles Canyon and the Rapids. "The distance from the head to the foot of the canyon is five-eighths of a mile. There is a basin about midway in it about 150 yards in diameter. The basin is circular in form, with steep, sloping sides about 100 feet high. The lower part of the canyon is much rougher to run through than the upper part, the fall being apparently much greater. The sides are generally perpendicular, about 80 to 100 feet high and consist of basalt, in some places showing hexagonal columns.

"The rapids are about three-eighths of a mile long. They are the most dangerous rapids on the river, and are confined by low basaltic banks, which at the foot suddenly close in and make the channel about 30 yards wide. It is here the danger lies, as there is a sudden drop and the water rushes through at a tremendous rate, leaping and seething like a cataract."

This description was written by William Ogilvie, years before gold drew a stream of adventurers down this course. In 1897, "many men who ran these dangerous waters had never handled a boat in their lives until they stopped at Lake Bennett to figure which end of their oar went into the water." According to the *Klondike Nugget,* "there was only a momentary hesitation, and, the one behind the other, the boats filed into that tremendous first section of the canyon, dodged the whirlpool in the middle, rushed down the second section of the canyon, tossed around for a while in the seething water of the Squaw rapids, made that stupendous turn into Whitehorse and an extra grip was taken on the oars, as with rapidly accelerating speed they plunged into the final chaos of angry water. . . . There being no darkness, there was nearly as many passing there at midnight as at midday. Weeks and months the procession continued, and only the ice of the fall put a stop to this, one of the most stupendous feats ever performed by a stampede of gold hunters. At the foot of Whitehorse boats were bailed out and clothes and provisions laid out in the sun to dry after the drenching of the spray just received."

In 1897 Jack London earned $3,000 as a pilot on these waters. Soon after, five miles of tramway were built on both banks of the river to carry freight over the dangerous area. At the foot of the east-bank tramway grew up the old town of Whitehorse. The present town is at the foot of the west tramway, parts of which may still be seen. Here in '97 the most difficult part of the trip was passed; and here today the traveler leaves the railroad for a river steamer.

WHITEHORSE (p.o., 541 pop.), 110 miles from Skagway, is the terminus of the White Pass and Yukon Railway and the head of navigation on the Yukon. There is an aviation field here. During closed navigation, communication between Whitehorse and Dawson is by the Overland Route. Caterpillar tractors, horse stages, and dog teams are all used on this road. Whitehorse is the outfitting point for hunting expeditions to the White River and Kluane Lake districts 150 miles west, and the Pelly River and Macmillan River districts to the north and east. It is a copper-mining center and a number of wagon roads connect the town with near-by camps. There are several fox farms in the vicinity. Two hotels accommodate visitors.

In the shipyards at Whitehorse can still be seen the rotting hulls of boats abandoned after the gold rush. The town was destroyed by fire in the spring of 1905, but many well-constructed buildings have been erected since. There are two churches, St. Andrew's United and the Old Log church of which Robert Service was at one time warden. A park has been dedicated to Service by the townspeople, and the cabin of "Sam McGee" is open to visitors. An automobile road leads from Whitehorse to the head of Miles Canyon, with a footpath running close to the water. Here may be seen the remains of the old tramway. A suspension footbridge across the canyon gives a good view of the dangerous waterway.

A 150 mile trip from Whitehorse to Kluane Lake may be made over a wagon trail. Sixty-four miles from Whitehorse on this road is CHAMPAGNE LANDING (p.o.), a fur-trading post and Indian village. KLUANE LAKE is in unusually beautiful country and a center of big-game hunting. Moose, caribou, bear, mountain sheep, and goats are found here; there is a roadhouse, and guides are available.

WHITEHORSE TO DAWSON BY RIVER STEAMER

The trip from Whitehorse to Dawson is 460 miles and takes a day and a half. It is made in shallow-draft, flat-bottomed river boats, propelled by a paddle wheel in the stern.

Twenty-five miles beyond Whitehorse the steamer enters Lake Laberge. There is excellent trout fishing here, and during the gold-rush days fish was sent from this lake to Dawson in ton loads. The water is icy cold and an upset boat meant almost certain drowning. This is the scene of Service's "Cremation of Sam McGee." Sam's partner, trying to cremate the frozen body in the boiler of a derelict boat, looked in to see how it was going. He saw a smiling corpse who said,

Please close that door.
It's warm in here, but I greatly fear that you'll let in the storm.
Since I left Plumtree, down in Tennessee, it's the first time I've been warm.

The stream beyond Lake Laberge is known as Thirtymile River. Here came the miners and adventurers who had dried themselves in the sun at Whitehorse. "Over Lake Laberge went the white fleet of unpainted boats, and then came the final tug-of-war in Thirtymile River which wrecked more brave fellows in a day than Whitehorse did in a week. Sunken, treacherous rocks; a shallow rapid current reaching a speed in places of nearly ten miles an hour; gravel bars over which the rapid waters were lashing into foam which concealed protruding boulders and impassable shallows; mammoth rocks standing in the river in groups, against which the current would dash itself in impotent fury, carrying everything which floated upon its surface with a devilish malignity and well nigh irresistible force upon those flinty points which could and often did break a heavily built scow into two or three pieces." At Hootalinqua the Thirtymile River unites with the Teslin to form the Lewes, and from here to Dawson the route offered no serious dangers.

Hootalinqua, a small trading post at the confluence of the Thirtymile River with the Teslin, is now chiefly of interest to big-game hunters. The country abounds in moose, caribou, sheep and bear; grouse, waterfowl, and fish are also abundant.

In 1880 Edmund Bean and his party crossed the Chilkoot Pass and traveled as far as Hootalinqua without finding gold. During the stampede era many prospectors reached the Interior by the Stikine River, north of Wrangell. From here they traveled overland to the Teslin, and joined the stream of Klondikers at Hootalinqua.

Twenty-seven miles beyond Hootalinqua is CASSIAR BAR, the famous "diggin's" in the Semenoff Hills where placer gold was found in 1886, ten years before George Carmack made his strike on Bonanza.

BIG SALMON is a fur-trading post and miners' supply station at the mouth of the Big Salmon River, thirty-five miles beyond Hootalinqua. In 1881 four miners coming from the Chilkoot Pass reached the Big Salmon. They entered this stream and discovered gold in small quantities.

LITTLE SALMON, 70 miles from Hootalinqua at the mouth of the Little Salmon River, was once the largest Indian camp on the Yukon. It was a trading post and had an Episcopal church. When the trading post closed the Natives were dependent on the river for food.

CARMACKS, or TANTALUS (p.o.), is a coal-mining village on the left bank of the Lewes below Little Salmon. A mile beyond the town is Tantalus Butte, a high bluff that tantalizingly seems to get no nearer as it shows time after time from the winding river. A good grade of bituminous coal is mined here. The overland trail from Whitehorse to Dawson touches the river at Carmacks. A mail stage covers this route three times a week.

At Carmacks the Nordenskiold enters the Lewes and greatly augments the stream. A short distance beyond are the FIVE FINGER RAPIDS, 225 miles from Whitehorse and the half-way point to Dawson. Four rock towers, their tops fringed with stunted spruce, almost choke the river, forming five channels through which the current tears with great velocity. The rapids are formed by these islands in the channel which back up the water, raising it about a foot and causing a swell below for a few yards. The islands are of the same conglomerate as the cliffs bordering the river and apparently fell from these at some time in the distant past. Only one of the channels, the westernmost, is navigable for river steamers.

Below Five Fingers are the eddies of RINK RAPIDS, and beyond is YUKON CROSSING, where the overland trail crosses from the east to the west side of the river. The road runs for 45 miles along the flats of the river bank, climbing the steep slopes when these are undercut and impassable at the water level. MINTO BRIDGE is a roadhouse station 20 miles below Yukon Crossing. HELLSGATE, some miles beyond Minto, was once a difficult stretch of "bad water." but the channel has been cleared.

SELKIRK, at the junction of the Lewes and Pelly rivers, is a settlement with an Episcopal mission. It is a trading center for trappers from the Pelly and Macmillan districts.

In 1840 Robert Campbell, an officer of the Hudson's Bay Company, was sent out to follow the Liard to its source and find another river flowing westward. He found the stream, which he named in honor of Sir John Henry Pelly, governor of the company, and followed it to its junction with the Lewes, named for John Lee Lewes, chief factor of the company.

Campbell established Fort Selkirk in 1848 at the junction of the Pelly and the Lewes against the advice of local Indians, who warned him that tribes to the south would be hostile. In 1850 Campbell continued his explorations down the Yukon, and was the first white man to pass the mouth of the Klondike. He reached Fort Yukon, a Hudson's Bay post that had been established in 1847. From here the furs assembled at Fort Selkirk could easily be sent along the familiar Porcupine and Mackenzie rivers to company headquarters.

The hostile Indians to the south were the Chilkats, whose trade between the Interior Indians and the coast was threatened by this outpost of the white man from the east. On August 21, 1852, they raided Fort Selkirk, carried away guns and ammunition, and cached the other supplies. These were later found and appropriated by the local Indians. Campbell returned to the fort two days after it had been demolished. He sent his men to Fort Yukon for the winter, and set out for London to get permission to rebuild the post. There were 10,000 miles between London and Fort Selkirk, and 3,000 of them were an uninhabited wilderness which Campbell crossed on snowshoes in the middle of winter. He failed to get the permission, and the fort was abandoned.

In 1885 Al Harper, primarily a prospector for gold but also a fur trader in the employ of the Alaska Commercial Company, established a post, Selkirk, on the site of the old fort, but moved to Ogilvie at the mouth of Sixtymile when the Pelly showed no signs of bearing gold.

Near the mouth of the Pelly can be seen the crater of an extinct volcano, and volcanic ash is found throughout the valley. On the level land near the water is one of the largest farms in the Yukon, where hay, vegetables, and cereals are regularly grown. Immediately below the mouth of the Pelly are ten miles of steep cliffs that mark the Upper Ramparts of the Yukon. The Yukon technically begins with the junction of the Pelly and the Lewes, although it is common practice to consider the Lewes part of the Yukon, and the Pelly a tributary.

While the Hudson's Bay Company men were reaching the headwaters, other traders were making their way upstream from Norton Sound. In 1778 Captain James Cook sailed near its mouth, but missed the river. Naval Officer Vasilief explored Bristol Bay and Norton Sound in 1829, and the following year a large part of the lower Kuskokwim River, already known to the Russians. Here he heard of a great stream to the north. In 1831 Tebenkof built St. Michael on Norton Sound near the mouth of the Yukon, and three years later a party under Glazunof reached Anvik on a river called by the Eskimos Kvikhpak (*ḳviḳh,* river, *paḳ,* large), which the Indians who lived along its interior length called Yukon. A Greek Orthodox mission was established here in 1843. In 1838 Malakof had reached Nulato overland and built a trading post, burned the following winter by the Natives. It was rebuilt and fortified in 1842 by Lieutenant Zagoskin, who mapped 600 miles of the "Kvikhpak" between '42 and '44. He gathered valuable trading information for his company and was on friendly terms with the Natives. By 1863 Russian traders and explorers had reached Fort Yukon. Meanwhile the British were exploring the upper regions of the river. Robert Kennicott of the Western Union Telegraph Expedition was the first American explorer to traverse a large part of the Yukon, in 1861 and 1865. Strahan Jones, commander of Peels River Fort, in 1863 descended the Yukon to the mouth of Novitna River, the uppermost point reached by Zagoskin. Thereafter successive American expeditions rapidly made the Yukon known, among them Dall, Whymper, Raymond, Schwatka, Richardson, and Brooks. By the late 1890's boom gold towns were located along the river and a flotilla of large river steamers plied its length. Less than a generation later the river steamers had all but disappeared, St. Michael was the boneyard of old ships, many of the boom towns had become ghost villages, and the Yukon had returned to its dormant, lonely state, awaiting the slower but surer development of agriculture and industry before it could again be awakened.

Of the Yukon Dr. Ales Hrdlicka, who has made archeological investigations along its banks, says, "The river remains but half known, at best. It has never been fully surveyed, which would be a vast and unending task. It contains a large number of barely known little tributaries that are lost in the jungle-covered flats with their many pools and lakes. It has innumerable islands and channels in which the traveler is easily lost, and it cuts and builds constantly during the open season. Its valley is squally and rainy. The stream may one moment be like a great, liquid, softly flowing mirror, to be in a few minutes churned into an ugly and dangerous roughness from which every smaller boat must seek shelter. Its shores are inhospitable, except for the Native fisherman and hunter, and torment man with swarms of gnats and mosquitoes. But there is no malaria; there are no snakes or other poisonous things. And when the weather is decent the water, the wooded shores, and the fresh, clean, virginal, parklike islands have a greatness and charm that compensate for much. Besides which there is the still more intensive allure of original exploration. Botany, zoology, and above all paleontology find here still a fruitful field, while for anthropology, and especially archeology, the land is still largely a *terra incognita*."

Since the Yukon is easily navigable for small boats, it must have played an early and important part in peopling Alaska before the coming of the white man. The upper regions were populated by Indians, whose villages can be traced by their characteristic tool—a double-grooved, cupid-bow ax of stone. The lower regions were peopled by Eskimos, who used a stone ax with a single edge, or sometimes the Indian tool, which they adapted to their tradition simply by breaking off one end and hafting it like an adze. The Eskimos made their dishes of wood, the Indians, of birch bark; the Eskimos used skin canoes, the Indians, bark canoes. Neither deformed their bodies, heads, or teeth; but Eskimos wore labrets and the Indians, nosepieces; and the Eskimos cut their hair short, the Indians left theirs long. The Yukon winter houses were subterranean rooms with a tunnel or corridor, framed with stout posts and covered with birch bark and sod, the smoke-air-light hole at the center of the top, and a fireplace in the middle of the floor. Each village had a communal house. Summer houses were made of skins—later, with the coming of the white man, of canvas.

The Yukon Indian tribes had many names, and usually each tribe had two sets—one used by themselves, and the other contemptuously by outsiders, thus occasioning great confusion among early traders. All the Yukon Indians belong to the Tinneh, or Déné, family. Their winter villages were permanent, as they lived in fishing camps during the summer. In 1843 Zagoskin counted 1,359 Yukon Indians by adding up the population of all villages known to him. Dall estimated in 1866-7 that there were 2,800 Yukon and Tanana Indians and 1,000 Yukon Eskimos. Today there are not more than 1,000 remaining Tinneh (probably fewer), and most of these are of mixed blood. Most of the old Yukon Indian villages have disappeared, and new villages sometimes bear new names corrupted from the English (as Ulstissen, for Old Station). Most of the old Eskimo villages have also disappeared or been deserted, although the hardy Eskimos have managed to survive in better condition than the Indians. But there was never enough fish and game in the Yukon watershed for primitive man to occupy it in great numbers.

The 500 miles from Selkirk to the Arctic Circle are caribou country, and evening after evening Indian campfires are spotted on the river's shore, and the smell of broiling caribou meat drifts across the water. The country is infested with great swarms of mosquitoes. A "tall story" recounts how they attack and kill even bears. However that may be, they certainly reduce the number of caribou hunters in the territory. The barren ground caribou is highly valued, because its meat is the chief item of diet to the Native population in most of interior Alaska and Arctic Canada. Its skin is used for clothing, and no manufactured cloth equals its resistance to wind and sub-freezing temperatures. The caribou which migrate north each year in July, crossing the Yukon between Selkirk and Circle, are becoming greatly depleted in numbers. Some large herds may still be seen, although generally it is their ribbed tracks which show that they have passed that way. Caribou can swim long distances protected by air in and between the hair of their thick coats. Their ordinary speed of two miles an hour may be increased to five, if necessary.

The 178 miles downstream from Selkirk to Dawson are made in fast time, the steamer rounding one large bend after another. The

White River, rising from the glacial beds of the St. Elias Range along the international boundary, pours its milky water into the clear green of the mother stream. From this point on the Yukon is clouded and muddy, and fish wheels appear along the banks. These traps are used in all muddy streams where the fish cannot see the scoop. The wheel is turned by the current and is usually flanked by covered racks of red split salmon.

STEWART is on the eastern bank of the Yukon at the mouth of Stewart River. The town is a transfer point for the silver-mining district around Mayo.

Stewart River was discovered in 1849 by James Stewart, Campbell's assistant clerk, who was sent out from Fort Selkirk to follow the Indians in search of food. He found this river and crossed it on the ice. Placer gold mining began along the Stewart River in 1885. The following summer a hundred miners were working in the district, each frequently making as much as one hundred dollars a day. That year the prospecting fur traders Harper, McQuesten, and Mayo established a post at the mouth of the Stewart and another at Fortymile, prospecting along the Fortymile, Sixtymile, Tanana, and White rivers while carrying on their trade for the Alaska Commercial Company. The townsite of Stewart was staked out in 1898 under United States pre-emption laws, but the Alaska boundary award placed it under Canadian jurisdiction.

Jack London's one winter in the Yukon was spent at Stewart, where he was snowbound on his way to the gold fields. He spent the winter with *Capital, The Origin of Species, Paradise Lost,* a volume of Kipling, and seventy human beings—Burning Daylight, Pruette, Malemute Kid, Yellow Legs, and the rest of them who were to live in the pages of *The Call of the Wild, White Fang,* and other stories.

Placer gold is still found on the upper tributaries of the Stewart River, but silver mining is now the chief industry in the district. Here modern, efficient methods are used. Officials, mail, and express are carried by plane, and ten-ton caterpillar tractors haul freight. The shipped ore is sent down the Stewart River on barges.

MAYO LANDING (p.o.) on the right bank of the Stewart River, 180 miles from the Yukon, is the administrative and commercial headquarters of the silver-mining district. Truck and tractor roads connect the town with the mines on Galena and Keno hills.

Mayo Lake (2,000alt.) is in a good game district. Mountains over 4,000 feet high are reflected in the cold, clear water of the lake.

The 72 miles from Stewart to Dawson are made down an island-filled stream, where moose and black bears feed on the open hillsides. Sixtymile River is passed on the left, and opposite on the east shore of the Yukon is Ogilvie, the trading post established by Harper in the 80's. Beyond Ogilvie, Indian River flows into the Yukon from the east. A short distance before Dawson, on the west bank, is Swede Creek. There is an agricultural experiment sub-station here, where wheat has been grown to full maturity. From Swede Creek can be seen the great slide above Dawson, and the traveler may experience some of the gold hunters' excitement as he catches sight of the white scar on the mountainside that marks the end of the trail, the mouth of the Klondike, and the town of Dawson.

Dawson (p.o., 1,000pop. est. in 1938) is on the east bank of the Yukon at the mouth of the Klondike. Spruce-covered mountains close in behind the town; wharves and warehouses line the shore. On the waterfront there is always something of interest. Boats from the lower river, the interior of Alaska, or from the silver camps on the Stewart River may be in port. In the town, wide streets slope down in a southwesterly direction from the foot of the hills to the landings on the river bank. The stores have plate-glass windows, and the dwellings are largely white frame buildings. Dawson is the capital and administrative center of Yukon Territory. It is also the distributing point for the Klondike gold area to the southeast. The town has a telegraph station, electricity, telephone, and water service. There are two churches, and several hotels. Twelve miles from Dawson, in the Klondike River Valley, is an airplane landing field. The White Pass and Yukon steamer remains in dock twenty-four hours before making the return trip. Passengers may wait over for a later boat.

In 1895, Robert Henderson, who had been prospecting throughout the Indian River watershed, made a strike in Gold Bottom. The next summer as he was going down the Yukon for supplies he saw George Carmack and two Indians, Tagish (Tahk-Leesh) Jim and Tagish Charlie, fishing for salmon at the mouth of the Tron-Deg, or Klondike. This was a famous salmon stream, and the Native name is said to mean "hammer-water" from the trap stakes which were hammered into its bed, although some authorities say it means simply "river full of fish." Henderson, according to a miners' custom, told his friends of his find in Gold Bottom and advised them to stake claims there. He also advised them to prospect along the creek that is now called Bonanza and send him word if they found anything.

The three men filed claims in Gold Bottom and then entered Bonanza Creek valley. On August 17th, 1896, they struck placer gold in extraordinary quantities. Carmack washed out $238 in one pan, and is said to have carried this about with him ever after. Discovery Day is still celebrated in Dawson and other parts of the Yukon. The excited men hurried to Fortymile to file their claims and forgot to notify Henderson. At once a stampede began from the near-by mining districts and for two years gold seekers streamed over the Chilkoot Pass into the valley of the Klondike. By the spring of '99 practically all the creek beds in the area had been staked. Henderson, working alone on Gold Bottom, less than a day's journey from the strike, did not hear of it until too late to file a claim in good ground. He felt that he was the true discoverer of the Klondike gold, and as such was awarded an annuity of two hundred dollars a month by the Canadian government. As for Carmack, he claimed to have gotten only about $60,000 from his discovery—remarking that relatives who managed his affairs for him got the rest.

The town of Dawson was established in 1898 and named for the director of the geological survey for Canada, Dr. George Mercer Dawson. Administrative authority for Yukon Territory had been established at Fortymile in 1895. In '98 it was transferred to Dawson, which in a few months had become the commercial and social center for 30,000 fortune seekers. Here on the flats of two river banks was a city of trampled mud streets, saloons, gambling houses, and theatrical shows. The saloons frequently took in as much as six thousand to eight thousand dollars a day. They were not merely places where men drank, but offices for important business transactions. Here men came to sell claims which they thought were worthless for as much money as they could find on a drunken newcomer—claims which more than once proved to be worth fortunes when the sober, desperate chechakho began to work them, because there was nothing else he could do.

There were many who were not miners in the jostling, shouting throngs that filled the Dawson streets. In the crowded dance halls the miners led glittering ladies through the measures of *After the*

Ball Is Over and *See Me Dance the Polka,* at a cost of a dollar a minute. Traders who had packed tons of freight down the difficult trail felt justified in asking whatever the town could pay for their wares. Condensed milk sold for $3 a can; eggs, $18 a dozen; sugar, $100 a sack; butter, $10 for a 2½ lb. can. A bowl of soup in a restaurant cost a dollar. Newspapers brought high prices from men who were starved for news of the outside world. A Seattle paper sold for $10, and the buyer rented it out in a dance hall for $2.50 a reading. When the Dawson market for this particular paper was exhausted it was taken into the smaller settlements.

Dawson did not lack spiritual comforts. In spite of the incredible hardships involved, the Roman Catholic priest Father Judge and the Presbyterian missionary S. Hall Young reached the Klondike in the summer of '97. Before the fall of '98 they were joined by three other priests, a Presbyterian and a Methodist minister, and eight Salvation Army officers. The Christian Science Society of Dawson was not organized until 1912.

Among the fortune seekers in the makeshift town on the Klondike were Jack London, Robert Service, Rex Beach, Joaquin Miller, and E. H. White. Jack London saw only as much of this country as he needed to love it—the immense tracts of wilderness, solitude, physical hardship and danger, the perfect setting for the primitive drama of life. All that went on in the Dawson saloons—except the drinking—all the intricate struggle of cheating, was antipathetic to this twenty-one-year-old boy. He stood in the midst of this and heard only tall stories of adventure. The undernourished, rebellious young giant came down with scurvy in his one winter at Stewart. He left the Klondike that June and made his way back to California by following the Yukon to its mouth.

Robert Service worked in Dawson as a bank clerk. Out of his daily life he built a glamorously strange town of prospectors, dance-hall women, and gambling men that made him a popular poet. The best loved of his works are *Songs of a Sourdough* and *The Shooting of Dangerous Dan McGrew.*

Rex Beach, a football player and Olympic swimming champion, was drawn to the Klondike. Not finding a fortune here he spent two years wandering through Alaska. Returning to Chicago, he found a wealth of memories out of which he produced *The Silver Horde, The Iron Trail,* and many other novels of the north.

Joaquin (Cincinnatus) Miller, a protégé of Rossetti and widely acclaimed as the Poet of the Sierras, was sent to Dawson as a feature writer for the *New York Journal*. Cincinnatus Miller had had a varied life. Born, according to his own account, in 1841, in a covered wagon "at or about the time it crossed the line dividing Indiana from Ohio," he grew up to be a professional horse-thief, teacher, lawyer, editor, poet, vigilante, and judge. His poems had "brought to the calm air of literary London a breath of the great winds of the plain." But this wind was not a marketable commodity in Dawson, and Miller left without making any mark on the town or being impressed by it himself.

E. H. ("Stroller") White arrived in Dawson penniless with a wife and young baby. He originated a humorous letterhead that sold in large quantities at two dollars a dozen. Tourists still find it amusing to write home on the stationery of a fictitious Sourdough Hotel. His wit finally brought him a job on the *Klondike Nugget,* the Dawson daily which sold for a dollar a copy, and his column *The Stroller* has become part of Yukon history. His news stories did not always come across the telegraph lines, and imagination played a large part in filling the columns of the *Klondike Nugget*. During one of the blank periods White wrote a story about a night when the thermometer hit 70° below. Blue snow fell, and ice worms, drawn to the surface by the low temperature, made such a chirping that the people of Dawson could not sleep. Scientists in London and Washington were taken in by the yarn. White says, "The Nugget office was besieged by eager questioners. It did no good for me to assure them that the blue snow and the ice worms had no existence outside my imagination. They accused me of trying to keep information from them. They insisted on details." No newspaper man could withstand that, and he gave them details. Saloonkeepers began to sell "ice-worm cocktails," with a bit of spaghetti embedded in the ice. Since the hoax, certain animalculae living in pools found on the surface of glaciers have been called ice worms. But these are not the interesting variety Stroller White had in mind.

Noisy, crowded Dawson was built of wooden shacks and was twice swept by fire. On October 14, 1898, a fire started in the Green Tree Saloon and Hotel and destroyed buildings and supplies valued at five hundred thousand dollars. Six months later, on April 26, 1899, a second fire destroyed property valued at twice that amount.

But many vestiges of the gold-rush period escaped the fires. The dance-hall decorations, dusty but still naughty, remained to face an empty floor that once had been crowded with miners and gold-digging ladies. Service's cabin, built against the steep hillside at the head of a street, is open to visitors. A walk to the Indian village, Moosehide, two miles north of town, leads along an old flume built for mining.

Midnight Dome is a 4,220-foot elevation, twenty miles from Dawson. The summit is reached by automobile, and gives a panoramic view of the entire Klondike area. To the north is the Klondike, to the south the Indian, both flowing west into the Yukon. Gold-carrying creeks surrounding this peak in all directions have world-famous names—Klondike, Bonanza, Eldorado, Lost Chance, Gold Bottom, Dominion, Sulphur, Little Blanche, Eureka, Indian. Rich deposits were found on these and many other creeks, but no claims ever equaled those along Bonanza and its tributary, Eldorado. One and one-half million dollars was taken from the four-acre claim, No. 16 Eldorado, and $1,300,000 from the six and a half acres of No. 17 Eldorado. It has often been thought that the source of all this gold must lie beneath Midnight Dome. Many prospectors have looked for it here, but the "mother lode" has never been found.

Practically all the camps in the Klondike area can be reached from Dawson by automobile. The famous Bonanza Valley is a short walk from town. Extensive hydraulic mining is now done near the mouth of Bonanza, and dredging operations can be seen at Bear Creek, eight miles up the Klondike. The early miners worked with pick and shovel, thawing the ground with wood fires. Since then heavy mining machinery has been brought into the country and extensive water systems constructed. One such system carries its water sixty miles. The individual miner has practically disappeared. His creeks are being mined by companies with new methods and new machinery that make a profit from what he had to pass by. A few of the old men still remain, making a meager living, from time to time prospecting farther, still hoping for a Great Strike.

Today the population is little more than a tenth of what it was in the boom days. The basic industry is mining, and the Dawson bank carries the sign *Gold Dust Teller*. Dawson is still the commercial and social center of the district. But peddlers who take their goods to the miners have reduced the amount of visible trade carried on in town.

The public grade schools and high schools of Dawson maintain a bus service for children living within ten miles of town, and an Episcopal home boards children from beyond this district. There is a Carnegie library of more than 5,000 volumes, and a modernized hospital conducted by St. Mary's Roman Catholic Church. Dawson is the Yukon headquarters for the Royal Canadian Mounted Police, and the barracks of this famous force are open to visitors.

During the summer Dawson is a town of rich lawns and brilliantly colored flowers. Many short-season vegetables grow to remarkable size. A world record for potatoes was made here in 1923; a yield at the rate of 42 tons per acre, the average potato measuring 2 by 1½ feet and weighing 3½ pounds. The long summer day is followed by a cold dark winter with a record low temperature of 68° below zero. In the winter sky the northern constellations are extraordinarily brilliant.

DAWSON TO NENANA BY RIVER STEAMER

The White Pass and Yukon Route operates steamers from Dawson to Nenana where connection is made with the Alaska Railroad. (See Part II, 5.) The Alaska Railroad operates steamers on the lower Yukon from Nenana to Marshall. Transfer from the upper river to the lower river steamer may be made at Tanana.

FORT RELIANCE is seven miles below Dawson. This was once the chief post of the Alaska Commercial Company and the center from which distances were reckoned before the days of Dawson. It was established in 1874 by McQuesten, and in 1875 Harper and Mayo were put in charge. In 1882 twelve miners who had crossed Dyea Pass spent the winter here. One of them was Joe Ladue, who followed the example of McQuesten, Harper, and Mayo and financed his search for gold by becoming an agent of the Alaska Commercial Company. He was soon in charge of the post at Ogilvie. These four men, more than any others, are responsible for the development of the northwest. For twenty years they prospected the entire territory, accumulating the small evidences that brought more and more men to the headwaters of the Yukon until George Carmack's strike in 1886 brought the area to the attention of the whole world.

Roughly between Dawson and Fortymile, but west of the international boundary, are several ghost towns that were important centers in gold rush days: CHICKEN (p.o., 20pop.), FRANKLIN (p.o., 19-

pop.), JACK WADE (p.o., 40pop. est. 1938), STEEL CREEK (p.o.). Chicken was so named because gold was found here the size of cracked corn or chicken feed. There is a general store and roadhouse at Steel Creek.

FORTYMILE (p.o., 317pop.), so called because it is forty miles below Fort Reliance, is on the west bank of the Yukon at the mouth of Fortymile River. It is a mining camp and the last settlement in Canadian territory before crossing the international boundary. A customs office and a detachment of mounted police are stationed here. A dozen or more scattered log cabins, some red-roofed white houses, a few stores, a roadhouse and an Episcopal chapel comprise the settlement today.

Harper found gold along the Fortymile in 1886 and established a trading post at the mouth of the river that year. In the early winter of 1887 George McCue and Dick Poplin found gold at Discovery Bar, nine miles above Moose Creek on the Fortymile. This precipitated a gold rush. During the summers immediately following, about five hundred men were working in the district, though not more than a hundred are thought to have remained through the winters. Fortymile was soon a town of two hundred log cabins and several saloons which did a roaring business. There was also a variety show brought up from California. Some of the girls are said to have been excellent dancers. One of the greatest attractions of the show, for men who slept in unplastered cabins and on bar room floors, was the stage sets. They were the finest possible, with "Chippendale chairs and a richly carved buffet with pier glass complete."

In 1895 the first detachment of mounted police was sent into the Yukon and established headquarters at Fortymile. The following year a mining recorder and gold commissioner were added to police authority. In '98 all authority was transferred from Fortymile to the booming town of Dawson.

Six miles below the mouth of the Fortymile River was CUDAHY, the chief post of the North American Trading and Transportation Company. This company was organized in 1892 and was the only American competitor to the powerful Alaska Commercial Company. Fifteen miles below the mouth of the Fortymile the Yukon crosses the international boundary and is in American territory.

EAGLE (p.o., 54pop.) is ten miles from the international boundary on the left bank of the Yukon. It is the first settlement in American

Alaska to be reached on the Yukon, and the United States customs office is here. Eagle is the supply center for a large placer-mining area. It has a school, an Episcopal mission, and two general stores. Three miles below the town is an Indian village of one-room cabins.

In 1881 Eagle was a solitary log house on the banks of the Yukon. But it was the southernmost point on the eastern course of this waterway within the United States, and was considered a strategic point in the early plans for opening up Alaska. There were many projects for a railroad or a highway connecting Eagle with the Gulf of Alaska, and a telegraph line from Valdez was actually laid. In 1899 Eagle was made a military post, and the deserted buildings of Fort Egbert may still be seen near the town. The United States District Court was first established here, then transferred to Fairbanks in 1904. The army post was abandoned in 1911. Since then portions of the telegraph line have been used by the Alaska Road Commission for a telephone line.

In December, 1905, newspapers in eastern United States carried a small news item dated Eagle City, Alaska, telling of a Captain Amundsen who had reached Eagle by dogsled from Herschel Island. "While the message is incomplete in details it purports to be from a member of an exploring party sent out by Nansen and states that the party is safe with the ship *Gjoa* wintering at King Point." In so uncomprehending a fashion was handled the greatest news story of the decade—that the northwest passage, sought by generations of explorers since the year 1576, had at last been navigated by Roald Amundsen, who had crossed 500 miles of unexplored country and a range of mountains 9,000 feet high in the season of short days, to give the news to the world. Amundsen remained at Fort Egbert several weeks before returning to his ship, but the full import of his feat was not recognized until late the following summer when he brought his vessel into Seattle (see Part II, 10).

WOODCHOPPER is a mining camp at the mouth of Woodchopper Creek, 60 miles above Circle City. Mastodon bones were found here by early explorers and prospectors. Miners scattering out from Dawson made this a camp. Today it is little more than an outpost of the larger camp at COAL CREEK (p.o.).

CIRCLE (p.o., 50pop.) is an Indian village and mining center fifty miles south of the Arctic Circle. Its founders supposed that it was on the Circle and named it accordingly. Circle is the terminus of the

Steese Highway from Fairbanks and passengers may leave the boat and go by bus to Fairbanks (see Part II, 6). At Circle there is a Federal school for Native children, an Episcopal church, a general store, and a roadhouse.

In 1894 gold was found on Mastodon Creek by two men sent into the district by Harper. In a short time Circle was a camp second only to Fortymile. By 1898 it was a well-rooted town with a library, a hospital, and an Episcopal church. McQuesten was at Circle during these years, and it was here that he improvised a remarkable thermometer. Four bottles containing separately quicksilver, whiskey, kerosene, and Perry Davis' Painkiller were kept on a rack. Frozen kerosene meant one had better stay pretty close to the house. When the painkiller solidified it wasn't safe to step away from the fire.

The great strike in the Klondike drew off most of Circle's population. But there was little food in Dawson during the winters of '97 and '98, and many prospectors, old-timers and new-comers alike, came down the river during the dark months and were fed by McQuesten. The Fairbanks rush in 1902 took what miners had remained in Circle during the great boom and left the once populous camp a ghost town.

Gold is still mined in the areas around Circle, and good transportation has made this a sportsman's country. Moose, bear, sheep, and caribou are plentiful.

At Circle the Yukon widens out into many shallow channels, and this section of the river is known as Yukon Flats. Lieutenant Schwatka, mapping the Yukon in 1883, wrote of this, "The 29th of July was a hot, sweltering day, with the sun and its thousand reflections sending their blistering heat into our faces. In fact, our greatest inconvenience near the shortArctic strip of the stream was the tropical heat. We drifted down the hot river, by low banks that needed nothing but a few breech-clouted Negroes to convince us that we were on the Congo."

Fort Yukon (p.o., 304pop., mostly Natives) is a fur-trading center one mile north of the Arctic Circle on Yukon Flats at the mouth of the Porcupine River. The Yukon here is a monotonous stretch of muddy channels, twenty miles wide, showing countless islands. Fort Yukon is the oldest English-speaking settlement in Alaska. For more than twenty years it was the chief trading post of the Hudson's Bay

Company. Sir John Franklin, who discovered Peel River and named it in honor of his friend Sir John Peel, reported a great supply of fur-bearing animals in that region. In 1839 the Hudson's Bay Company sent out a party under John Bell, a son-in-law of Dease, to find a suitable post in the far west. Leaving Mackenzie delta in 1839, Bell went down the Porcupine and saw the Yukon in 1846. The following year a post was established there by A. H. Murray. It was known at the time that this was Russian territory, but a friendly trade agreement existed between the Hudson's Bay Company and the Russian America Company. Alaska was purchased by the United States in 1867, and in 1869 the English company was ordered to leave Fort Yukon. The post was first moved to Old Rampart House, but this too was found to be on American territory, and it was moved again twenty miles further up the Porcupine. In a short time the English company was replaced in Alaska by the powerful Alaska Commercial Company.

Robert Campbell and his men, traveling between Fort Selkirk and Fort Yukon about 1850, found small quantities of gold. The Rev. Robert McDonald, stationed at Fort Yukon in 1862, also found gold in the course of his travels among the Indians. It was the Rev. McDonald's reports that brought professional gold seekers into the country ten years later. The first men to come into the territory for gold arrived at Fort Yukon on July 15, 1873. In this party of eight were the famous trio, Harper, McQuesten, and Mayo, who soon established themselves as agents for the American fur company, built most of the settlements along the Yukon, and found most of the gold centers in the territory, except that at Dawson.

In 1898 Fort Yukon was filled with disappointed men from the Klondike. Some of the more desperate fortune seekers organized a raid on the food supplies in town. Captain Ray and Lieutenant Richardson of the signal corps were wintering there and, without soldiers to back them, took charge of the situation, commandeered all food in the name of the United States government, and rationed it to the townspeople.

Today Fort Yukon is a town of a few white residences and many Indian cabins, with schools for whites and Natives, a roadhouse, trading post and several stores selling fine furs and Indian work. There is airplane service between Fort Yukon and Fairbanks. This is the largest Indian village on the river and was once the headquarters of the Episcopal missions in the district. Like all Indians in the Yukon Valley, these people suffer greatly from tuberculosis. The Hudson Stuck Memorial Hospital, built in 1915, has done much to improve their condition.

The Episcopal church at Fort Yukon is a log building standing in the tall grass on the outskirts of town. The church has an altar cloth of moosehide, decorated with Indian beadwork. The cemetery has gravestones dating back to 1850, and Archdeacon Stuck is buried here.

Hudson Stuck was born in London in 1863 and, although he lived most of his life in United States territory, never relinquished his British citizenship. He was Archdeacon of the Yukon from 1904 to his death in 1920. He was a great admirer of the Eskimos, and their champion against unscrupulous traders. In 1913 Stuck and three companions made the first ascent of Mt. McKinley, for which he received the Bach Grant of the Royal Geographical Society in 1919.

A launch may be taken from Fort Yukon up the Porcupine River to RAMPART HOUSE within the Arctic zone. OLD CROW is a fur-trading center and Indian village on the right bank of the Porcupine at the mouth of Old Crow River. Those who enjoy physical hardship may continue across country and ascend the Mackenzie, following the Hudson's Bay Company's route, which was later known as "the back door route to the Klondike."

Fort Yukon marks the northernmost point on the Yukon, which here begins a southwesterly course. At the end of June the midnight sun is plainly visible at this point. Each day it sets and rises farther to the north, until on June 21 it rolls the short distance between east and west on the edge of the horizon without ever dipping from sight.

BEAVER (p.o., 91pop. est. 1938), 52 miles below Fort Yukon on the northern bank of the river, was settled following some gold discoveries on Chandalar River. Mining is still carried on at CARO (25pop.) on the Chandalar, and this camp is connected with Beaver by a series of shelter cabins. The Chandalar was named for John Chandlar of the Hudson's Bay Company. CHANDALAR (p.o., 35pop.) is 120 miles by trail from the Yukon. The district contains a dozen well-defined vein systems averaging from three to five feet in width, with a total of about 1,000 feet of development work on some half dozen of the more promising showings. The miners live in cabins and in stone huts which they call "iglus," and there is not a woman in the district. Winters in the valley of the Chandalar are severe, 65° below zero being not uncommon. Quartz miners in the mountains are favored, however, for the mercury seldom drops lower than 35° below zero at the high altitudes.

STEVENS (p.o., 48pop.) is a village near the mouth of Dall River, subsisting on mining, fur trapping and mink breeding. RAMPART (p.o., 193pop.) is a trading post on the Yukon, about one degree south of the Arctic Circle. During the Klondike rush Rampart was an important supply center, with a population of 1,500. Rex Beach lived here, and his cabin has been preserved. This town and its people were the background for Beach's *The Barrier.*

TANANA (p.o., 185pop. mostly Native), at the mouth of the Tanana River, about 200 miles northwest of Fairbanks, extends for about a half-mile along the right bank of the Yukon, here about 20 feet high. Three miles above the town is the St. James Episcopal Mission. The old village on the opposite side of the Yukon was a famous trading point of the Kuchin tribes. There are several stores, a hotel, and a Catholic mission. The town is in a placer-mining district, and some fishing and mink and fox breeding are carried on. It is the site of a former U.S. Army post, Fort Gibbons, some buildings of which remain.

The Tanana is the largest tributary of the Yukon, over 600 miles in length and averaging 200 to 300 yards wide, with many side channels or sloughs, and is full of grayish brown silt. Occasionally the water undermines the banks and exposes the frozen strata of silt. Low-bush roses, high- and low-bush cranberries, raspberries, dewberries, and blueberries grow along the banks. The first white men to visit its mouth were Russian traders in about 1860, who called it "River of the Mountain Men." In the late 1870's the two traders Harper and Bates descended part of it. A scientific expedition led by Lieut. Henry T. Allen in 1885 passed over nearly its entire length, and in 1898 A. H. Brooks made important contributions to the geography and geology of the area. There were never many Natives—Petrov estimated them in 1880 at 700 or 800, Allen in 1885 at 500 or 600, Brooks in 1898 at 400. The nation was divided into an eastern or highland group and a northwestern or lowland people. They were warlike toward other Indians, but less so toward whites, whose weapons intimidated them or whose whiskey mollified them.

Tofty (p.o., 225pop. est. 1933) a mining camp some distance from the banks of the Tanana and 15 miles from Hot Springs, its shipping point, with which it is connected by telephone, is 120 miles from Fairbanks, which furnishes it with airplane service. Hot Springs (p.o., 45pop.), about 2 miles from the Tanana River, in a farming and mining district, is a resort frequently visited by citizens of Fairbanks (see Part II, 6). Tolovana (p.o.), in an important gold-mining district, is at the confluence of the Tolovana and Tanana rivers. Minto (p.o.) is a village of log houses facing the Tanana, with a general store and a mission. At Nenana (see Part II, 5) the country is flat on both sides of the river, apparently scarcely three or four feet above the water level. Below the town recent alluvial flats, lined in late summer and early fall with brilliant masses of fireweed, stretch some 60 miles southwestward and 20 miles northeastward. The shores are dotted with cabins and fishing camps, and a few tents in summer. Caches of fish rest on little wooden platforms placed on stilts; there are rows of dog houses, stacks of cordwood, canoes, and fishwheels that revolve lazily with the current and occasionally scoop out a fish and dump it into a box. Meat, often imported from Seattle, is kept cold in holes dug in the frozen ground.

TANANA TO YUKON DELTA BY RIVER STEAMER

The Alaska Railroad operates freight and passenger steamers on the Yukon between Tanana and Marshall. Steamers of the Northern Commercial Company operate from Marshall to towns on the delta and St. Michael.

The steamer passes Kallands (48pop.) and continues to Kokrines (p.o., 74pop.), midway between the mouths of the Tanana and Koyukuk rivers, a trading post with a general store about 200 miles northeast of Iditarod. The town subsists on trading, fishing, mining, and trapping. Ruby (p.o., 132pop.), about 120 miles west of Tanana, is the supply point for a large gold-mining area, with three general stores, a roadhouse, and other services. It is only a shell of its former self, and many buildings erected during gold-rush days are empty. A trail leads from Ruby to Long (20pop.) and Poorman (p.o., 60pop. est. 1938) mining camps with roadhouses. Cripple (24pop.) is a mining camp 40 miles south of Poorman. Eighteen miles down river from Ruby on the right bank is Meyer's, or The Dutchman's lone cabin. Five miles further is an Indian graveyard, and a little lower down some empty Indian huts. Now hills and the Kaiyuh Mountains are seen to the south, beyond the wide flats of the left bank.

At GALENA (67pop.), a village on a flat promontory, there is a general store and a Federal school for Natives. On BISHOP'S ROCK, a steep rocky promontory of stratified mud about 500 feet high, is a tall white cross marking the spot where Francis Fuller, a lay helper to Bishop John Charles Sehgers, murdered the latter in camp November 27, 1886. "He aroused the bishop from a sound slumber, and after a few insane ejaculations, shot him dead." KOYUKUK (p.o., 143pop.) is a pleasant row of houses (white and Native) 225 miles east of Nome, a small trading post and the site of a Native school. Here begin wooded hills, 400 to 800 feet high, along the right bank, with V-shaped valleys between, consisting of stratified mud rocks. A few old Indian camps and graveyards occur along the shores.

NULATO (p.o., 204pop.) is about 200 miles north of Iditarod and 220 miles east of Nome by airline, and some 550 miles from Bering Sea by the river. It has general stores, a roadhouse, and a Catholic mission. Along its waterfront on a high bank is a large Indian burial ground, with brightly painted wooden burial boxes flying flags. Here in 1838 Malakof built a blockhouse and stockade which was burned by Indians during his absence the following winter. Rebuilt in 1842 by Lieutenant Zagoskin of the Russian navy, it existed for ten years. His successor, Vasili Derzhavin, committed many acts of cruelty on the Natives, and in 1851 the Koyukuk Indians massacred the entire garrison. Also called "Stop-a-bit" by the Natives, Nulato has always been the great Native trading center for the area. Mining, fishing, and fur trapping and breeding are carried on.

KALTAG (p.o., 137pop.) is a Native village on the right bank of the river, once important as the river terminus of the trail between St. Michael and the Yukon Valley. On the opposite bank is an abandoned Native village. The name indicates Eskimo influence, and here the Natives show predominately Eskimo features. ANVIK (p.o., 79 pop.), on a pretty cove, is the site of an Episcopal mission founded in 1887 and of a Native school maintained by the mission. In 1938 it had a population of about 100. Here the Yukon Natives first were seen by white men when in 1834 Glazunof discovered the town, then numbering several hundred persons. They belonged to the Inkalik tribe—the name supposed to mean "lousy" from the fact that they never cut their hair, with the inevitable result. Formerly black pottery was made here, of rather poor quality, in which feathers were mixed to strengthen the vessels. Although this settlement is perhaps several hundred years old, there is no trace here or elsewhere along the Yukon of really old settlements dating 500 or more years back, perhaps because Native villages were seldom stable, and large centers were moved every few generations.

At the old village of Bonasila are old pit and tunnel dwellings. Here many stone tools were made, some betraying Russian influence, but many that were pre-Russian. Ghost Creek is a trading post, so named because of the many Native burials here. The dead were buried in boxes of hewn wood, the body covered with birch bark and placed in a flexed position, head to the east. The planks of the boxes were painted with figures of animals and men. Holy Cross (p.o., 295pop. est. 1938) is a Jesuit mission and school at the mouth of the Innoko about 400 miles from Fairbanks. The mission was established in 1887, and is operated by the Jesuit Fathers and the Sisters of St. Ann. There is a boarding school for Natives, a boarding house for visitors, general store, and a farm with cows and horses where sixty tons of potatoes and seven tons of vegetables are raised annually. Native children in the mission school publish a quarterly, *Holy Cross Echoes*. It was here that Father Jules Jetté (not of the mission) made his renowned studies of the dialects of the Yukon Indians. At Shageluk (p.o., 88pop.) on the Innoko above Holy Cross is a Federal school for Natives. Paimute, 25 miles below Holy Cross, is the first all-Eskimo village to be reached downstream on the Yukon. Dogfish Village, on the Yukon, is almost deserted, as most of its inhabitants died in an influenza epidemic in 1900. A few miles north of the river bank is Stuyahok (p.o.). At Russian Mission (p.o., 54pop.) there are two general stores and a mink farm. This is a portage point to the Kuskokwim River, at one time frequently used in reaching the Iditarod district from Nome in summer. Here was once the mother mission of all Russian churches, but the large and beautiful building is now falling to pieces.

Marshall or Fortuna Ledge (p.o., 111pop.) is the farthest point south on the Yukon. Gold was discovered here in September, 1913, and six hundred prospectors were encamped before the end of October. In 1916 its citizens named the town Marshall in honor of the vice-president, but the Post Office Department lists it as Fortuna Ledge. There are two general stores, a hotel, and a Territorial school. Roman Catholic and Swedish Lutheran services are held regularly by traveling missionaries. At Marshall, Alaska Railroad steamers connect with a Northern Commercial Company steamer taking passengers to St. Michael (see Part II, 9). At PILOT STATION is a Native school. Above and beyond the river the hills already belong to the coast range, and are treeless. The beginning of the delta region is now reached. At ANDREAFSKY (36 pop.) the firs and spruce disappear, the forests of birch are reduced to brush on the flats and on the lower slopes of the hills, the upper slopes of which are greenish with lichens. OLD ANDREAFSKY, about 150 miles south of St. Michael, was a salmon-fishing and packing village. The name is said to be derived from the Andrea family which early settled here and built the Russian church. Formerly, this was an important trading center on the lower Yukon, with warehouses, stores and dwellings, machine shops, a marine railway, and a large hotel. A stockaded post was established on the right bank by the Russians about 1853. In August, 1855, the Natives killed the two inmates of the stockade. At MOUNTAIN VILLAGE (p.o., 76 pop.) the Bureau of Indian Affairs maintains a hospital and school. There is a Roman Catholic mission here. HAMILTON (p.o.), a steamboat landing on the right bank of the river near the delta, has a general store, a school, and a dozen houses. AKULURAK (p.o., 165 pop. est. 1938) is an Eskimo village which has grown up around St. Mary's mission. The mission was established to care for orphans of the 1918 influenza epidemic. It stands on the highest ground in from the Bering Sea and is about 60 miles from the upper and 35 miles from the lower fork of the Yukon. About one hundred children are cared for by the Jesuit Fathers and the Ursuline Nuns.

KOTLIK, on an island in the delta of the Yukon, is an Eskimo village at the mouth of the Kotlik River. It was once an important fur-trading station. The name is derived from the Eskimo word *kwu-tlek,* pants, for here a small stream parts like the legs of a pair of trousers. This is tundra country, its treeless and bushless flats overgrown with a thick cushion of moss. KWIGUK (p.o.) is also on the Yukon delta, east of Kotlik. PASTOLIK, important in Russian days, is now practically a ghost town, with a graveyard and empty Native houses. North of the Yukon delta, on Norton Sound, is St. Michael (see Part II, 9).

3. GLACIER COUNTRY AND THE OLD COPPER RIVER RAILROAD

Glacier Bay National Monument—Yakutat—Malaspina and Bering Glaciers—Controller Bay—Cordova—Childs and Miles Glaciers.

JUNEAU TO CORDOVA BY OCEAN STEAMER

Leaving Juneau, the steamer passes the mouth of Glacier Bay and enters the Gulf of Alaska through Cross Sound. Gustavus (p.o.) is the center of a small farming district on Icy Strait. There is a public school and a general store.

Glacier Bay enters Icy Strait between Point Gustavus and Point Adolphus. It extends north and northwest from its entrance for about 60 miles to the boundary between Alaska and British Columbia, and lies within Glacier Bay National Monument and Tongass National Forest.

To enter Glacier Bay is to step a few thousand years backward into America's ice age. The bay contains at least eleven tidal glaciers, and one alone—Muir Glacier—has a drainage area of over 800 square miles and over 350 square miles of glacier surface, with two main tributaries, 20 to 22 miles long.

Glacier Bay was given its name by Commander Beardsley in 1880. It was first visited by Vancouver in 1794, and later by Russian explorers. Lieutenant Wood surveyed it in 1877, and John Muir explored it in 1879 and 1880. In 1879, Muir journeyed there with some Stikine Indians for guides. The stormy season was approaching, and the Indians were afraid to enter this "skookum-house of ice from which there might be no escape." Muir described the bay as "a solitude of ice and snow and newborn rocks, dun, dreary, and mysterious." The first glacier encountered was named after James Geike, Scotch geologist Another was named for Hugh Miller; a third, the largest of all, was called the Pacific. From his observations Muir deduced that when it was first formed "the entire bay was occupied by a single glacier of which all these, great as they are, were only tributaries." The bay has been studied and mapped, each time in greater detail, many times since. Most of the glaciers are rapidly retreating, and the number of separate ice fronts is increasing.

In September, 1899, an earthquake occurred which was apparently central in Disenchantment Bay, at the upper end of Yakutat Bay, and which upheaved the rocks in that vicinity, by actual measurement, some thirty or forty feet. This great disturbance of the earth's crust profoundly affected the glaciers in Glacier Bay. Previous to that time excursion steamers had regularly run up into the bay, and had experienced little or no difficulty in approaching within a few hundred yards, or as close as was deemed safe, to the face of the Muir Glacier, which at that time presented a perpendicular front at least 200 feet in height, from which huge bergs were detached at frequent intervals. The earthquake changed all that. The glaciers seem to have been completely shattered by the shock. Vast masses of ice were discharged which so choked the bay that it was impossible for steamers to enter. The breaking up of the ice masses seems to have been so thorough that great quantities have continued to be discharged every year since then.

Glacier Bay National Monument was created February 26, 1925, and has an area of approximately 1,820 square miles. The boundaries of the monument include a part of the coastline of North Marble Island, Bear Track Cove, Bartlett Cove, Excursion Inlet, Glacier Bay, and Lynn Canal, and extend to the international boundary line between Alaska and British Columbia, including the summits of Mt. Fairweather, Mt. Lituya, Mt. La Pérouse, and several other mountain tops. Creation of the monument was at the petition of the Ecological Society of America and the indorsement of the National Geographic Society, pointing out that the Glacier Bay district presents a unique opportunity for the scientific study of glacial action, of resulting movements and development of flora and fauna, and certain valuable relics of ancient interglacial forests. In 1939 the area could be reached only by chartered launch or plane from Juneau. In view of the great beauty and interest of the area, it is logical to expect that facilities for regular tourist trips to the monument will soon be made. But for anything more than a glimpse from plane or boat most people will be content to learn about these vast glaciers from the experience of others.

During a trip in 1880, after making notes on the movement of the glaciers in the region, Muir decided to take a sled trip to the huge Muir Glacier and its seven tributaries, where, incidentally, he got rid of a severe bronchial cough of three months' standing. Muir stood the trip well, but, as he remarked, "No microbe could." His only companion was his dog, Stickeen. "I had frequently to cross bridges that were only knife edges for twenty or thirty feet," wrote Muir, "cutting off the sharp tops and leaving them flat so that little Stickeen could follow me. These I had to straddle, cutting off the top as I progressed and hitching gradually ahead like a boy riding a rail fence. All day the little Stickeen followed me bravely, never hesitating on the brink of any crevasse that I had jumped, but now that it was becoming dark and the crevasses became more troublesome, he followed close at my heels instead of scampering far and wide, where the ice was at all smooth, as he had in the forenoon. No land was now in sight. The mist fell lower and darker, and the snow began to fly. I could not see far enough up and down the glacier to judge how best to work out of the bewildering labyrinth, and how hard I tried while there was yet hope of reaching camp that night! a hope which was fast growing dim with the sky. After dark, on such ground, to keep from freezing, I could only jump up and down until morning on a piece of flat ice between the crevasses, dance to the boding music of the winds and waters, and as I was already tired and hungry, I would be in a bad condition for such ice work. Our very hardest trial was in getting over the very last of the sliver bridges. After examining the first of the two crevasses, I followed its edge half a mile or so up and down, and discovered that its narrowest spot was about eight feet wide, which was the limit of what I was able to jump. Moreover, the side I was on—that is, the west side—was about a foot higher than the other, and I feared that in case I should be stopped by a still wider impassable crevasse ahead that I could hardly be able to take back that jump from its lower side. The ice beyond, however, as far as I could see it, looked temptingly smooth. Therefore, after carefully making a pocket for my foot on the rounded brink, I jumped, but found that I had nothing to spare and more than dreaded having to retrace my way. Little Stickeen jumped this, however, without apparently taking a second look at it, and we ran ahead joyfully over smooth, level ice, hoping we were now leaving all danger behind us. But hardly had we gone a hundred or two yards when to our dismay we found ourselves on the very widest of all the longitudinal crevasses we had yet encountered. It was about forty feet wide. I ran up the side of it to northward, eagerly hoping that I could get around its head, but my worst fears were realized when at a distance of about a mile or less it ran into the crevasse I had just jumped. I then ran down the edge for a mile or more below the point where I had first met it, and found that its lower end also united with the crevasse I had jumped, showing that we were on an island two or three hundred yards wide and about two miles long and the only way of escape from this island was by turning back and jumping again that crevasse, which I dreaded, or venturing ahead across the giant crevasse by the very worst of the sliver bridges I had ever seen. It was so badly weathered and melted down that it formed a knife edge, and extended across from side to side in a low drooping curve like that made by a loose rope attached at each end at the same height. But the worst difficulty was that the ends of the down-curving sliver were attached to the sides at a depth of about eight or ten feet below the surface of the glacier. Getting down to the end of the bridge, and then after crossing it getting up the other side, seemed hardly possible. However, I decided to dare the dangers of the fearful sliver rather than to attempt to retrace my steps. Accordingly I dug a low groove in the rounded edge for my knees to rest in and, leaning over, began to cut a narrow foothold in the steep smooth side.

"When I was doing this, Stickeen came up behind me, pushed his head over my shoulder, looked into the crevasses and along the narrow knife edge, then turned and looked in my face muttering and whining as if trying to say, 'Surely you are not going down there.' I said, 'Yes, Stickeen, this is the only way.' He then began to cry and run wildly along the rim of the crevasse, searching for a better way, then returning, baffled, of course, he came behind me and lay down and cried louder and louder.

"After getting down one step I cautiously stooped and cut another and another in succession until I reached the point where the sliver was attached to the wall. There, cautiously balancing, I chipped down the upcurved end of the bridge until I had formed a small level platform about a foot wide, then, bending forward, got astride of the end of the sliver, steadied myself with my knees, and cut off the top of the sliver, hitching myself forward an inch or two at a time, leaving it about four inches wide for Stickeen. Arrived at the farther end of the sliver, which was about seventy-five feet long, I chipped another little platform on its upcurved end, cautiously rose to my feet, and with infinite pains cut narrow notch steps and finger holds in the wall and finally got safely across. All this dreadful time poor little Stickeen was crying as if his heart was broken, and when I called to him in as reassuring a voice as I could muster, he only cried the louder, as if trying to say that he never, never could get down there—the only time that the brave little fellow appeared to know what danger was. After going away as if I was leaving him, he still howled and cried without venturing to try to follow me. Returning to the edge of the crevasse, I told him that I must go, that he could come if he only tried, and finally in despair he hushed his cries, slid his little feet slowly down into my footsteps out on the sliver, walked slowly and cautiously along the sliver as if holding his breath, while the snow was falling and the wind was moaning and threatening to blow him off. When he arrived at the foot of the slope below me, I was kneeling on the brink ready to assist him in case he should be unable to reach the top. He looked up along the row of notched steps I had made, as if fixing them in his mind, then with a nervous spring he whizzed up and passed me out on to the level ice, and ran and cried and barked and rolled about fairly hysterical in the sudden revulsion from the depths of despair to triumphant joy. I tried to catch him and pet him and tell him how good and brave he was, but he would not be caught. He ran round and round, swirling like autumn leaves in an eddy, lay down and rolled head over heels."

At Lituya Bay, about a hundred miles west of Juneau, is a rugged headland with one of the highest ranges of coastal mountains on earth. The bay itself is a narrow, T-shaped channel six miles long. At the head of the bay are ice-covered peaks between 10,000 and 12,000 feet high, and Mt. Fairweather, so named by Captain Cook for the atmosphere at the time of his visit, rises to over 15,000 feet. Blue-white glaciers lie in every valley, and below the ice fields are dark evergreens. On his third voyage around the world Captain Cook saw these mountains in 1778.

The French explorer Jean François de Galoup, Comte de La Pérouse, after participating in brilliant sea battles on the side of the United States in the Revolution, was given by Louis XVI command of an expedition of discovery. In 1786, on a search for the northwest passage, he entered Lituya Bay in the month of June. The shores were covered with wild strawberry blossoms and at slack tide the bright green water was as still as glass. He thought the bay resembled Toulon and named it Port des Français. For years it was known to Yankee whalemen as Frenchmen's Bay. The expedition remained for six weeks, making a survey of the bay, which is still in use. Two boats taking soundings capsized and twenty-one men were drowned. The commander put up a wooden cross on the prominent little island in the middle of the bay and named this Cenotaph. "There remained for us," remarked La Pérouse, "nothing more but to quit as speedily as possible a shore which had proved so fatal."

Thirty or forty years before La Pérouse entered Lituya Bay, a reservoir of water, dammed up somewhere among the glaciers surrounding Mt. Crillon, broke through the confining ice and swept down through the bay to the sea. Meeting the ocean swells it was turned back, surging and resurging through the bay many times. The wave crests of this old inundation are clearly marked high on the hillsides by the young timber growth contrasting with the virgin forest above. There was a similar flood in 1936, the recent wave crests matching closely in location with the earlier ones. Below the flood-crest line the hillsides were swept clean down to bedrock, and the beaches on the south side of the bay littered with large trees and boulders.

The international boundary commission mapped the coast range thoroughly in 1907, but not until 1926 was an attempt made to explore the heart of the range, when an expedition, consisting of Allen Carpe, Dr. William S. Todd, and Andrew S. Taylor, after reaching a height of 9,000 feet, was forced to return after the first recorded attempt to climb Mt. Fairweather (15,300alt.). In 1931 Carpe and Terris Moore scaled the peak. Mt. Crillon (12,725alt.), named by La Pérouse for the French minister of marine, was next attempted by the Harvard-Dartmouth expeditions of 1933-4, with aid furnished by the Geological Society of America. A scientifically streamlined expedition, which included the taking of aerial photographs by plane, the use of two portable radio telephones, the dropping of food by plane at predetermined spots, and careful mapping of the exact route in advance, made a successful assault on the peak in 1934.

The country between Lituya Bay and Yakutat is rarely visited except by trappers. Comet is a small settlement near Dry Bay. In the summer of 1918, Hardy Trefzger and Fred Zastrow, trappers of Dry Bay, came on a cabin and found the dead body of a man and a diary he had kept during the last six months of his life. Alone and sick, he had lived for that time on what he had been able to kill—eight goats, five lynxes, two bears, and a wolf. The diary is so eloquent of the indomitable spirit of lonely Alaskans that it is here given in full:

> Oct. 4th, 1917. Getting sick packing, now looking for camping place. Cold in the lungs with a high fever.
> 6th. Less fever, less pain, but getting weak.
> 7th. Feeling better but very weak.
> 9th. Getting a little stronger.
> 10th. Going to build a house. Will not be able to pull canoe up this fall, got to wait for the ice.
> 13th. Shot a glacier bear.
> 14th. Shot a goat.
> 17th. House finished.
> 18th. Taking out some traps.
> 20th. Made a smoke house.
> 21st. Shot one goat.
> 25th. Shot one lynx.
> 27th. Shot a wolf and a bear cub.
> 28th. Winter has come. Strong wind, two feet of snow.
> Nov. 4th. Shot one lynx.
> 6th. Made one pair of bearskin pants.
> 8th. Sugar is all gone.
> 13th. Made two pair of moccasins.
> 18th. Finished one fur coat of bear, wolf, and lynx.
> 21st. Finished one sleeping bag of bear, goat, blankets, and canvas. Rain for several days.

Nov. 22nd. Left eye bothers me. Shot one goat.

26th. Shot one lynx while eating breakfast.

27th. Made one pair of bearpaw snowshoes.

Dec. 1st. Getting bad. Cold for several days, river still open.

4th. River raised six feet in 24 hours.

6th. Slush stiffening, slowly making ice.

7th. The wind is so strong that you can't stand upright. River froze except a few riffles. Too much snow and too rough for sleighing. Snow getting deeper now.

15th. Very cold and strong wind, impossible to be out without skin clothes.

19th. Snowing but still very cold. Riffles up in the bend still open. Can't travel. Don't believe there will be ice a man can run a sleigh over this winter. Very little grub, snow too deep and soft for hunting goats. Stomach balking at straight meat, especially lynx.

21st. Shot a goat from the river.

25th. Very cold. A good Christmas dinner. Snow getting hard. River still open in places above camp.

26th. Broke through the ice. Skin clothes saved the day.

31st. Finished new roof on the house. One month of cold weather straight. Last night and today rain. Stomach getting worse.

Jan. 8th. 1918. River open as far as can be seen. Health very poor.

12th. Lynx moving down the river one or two a night; no chance to catch them.

15th. Goats moving out of reach. Using canoe on the river.

16th. One lynx. Weather getting mild.

20th. Rain today.

22nd. One lynx.

28th. One goat, been cold for a few days, no ice on river.

Feb. 1st. Cold weather nearly all month of January. Lynx robbed my meat cache up river. Salt and tea but once a day. Gradually getting weaker.

5th. Colder weather, feeling very bad. Just able to take care of myself.

10th. Milder, feeling very bad. Heavy fall of snow.

15th. Good weather continues, feeling some better.

24th. More snow. Living on dry meat and tallow.

26th. Shot one goat from the river.

Mch. 2nd. Shot one goat.

11th. Starting for Dry Bay, believing the river open. Out about one hour and struck ice. Can't go either way. Too weak to haul the canoe. Snow soft, no game here.

25th. Trying to get to the house. River is frozen in places, and rising. The sleigh is now only three miles from there, but open river and perpendicular cliffs keep me from getting any farther. At present cannot find anything to eat here. Eyes are getting bad.

28th. Eyes can't stand the sun at all. Finest kind of weather.

Apr. 1st. Got to the house with what I could carry. Wolverenes have been here eating my skins, robes, and moccasins, old meat, and also my goatskin door. They tried to run me last night, came through the stovepipe hole showing fight. Heavy fall of snow. Canoe and some traps down the river about five miles, close to Indian grave mark. Camp about halfway.

3rd. Still snowing. Cooking my last grub, no salt, no tea.

4th. Shot one goat, using all but three of my shells. Can't see the sights at all.

7th. Wolverene working on camp below carrying away my things. Ate part of my bearskin pants. Packed the old .30-.30 out into the brush. Eyes getting worse again, don't even stand the snow.

10th. Wolverenes at my bedding and one snowshoe. In the tent, getting shaky in the legs. A five-mile walk a big day's work.

12th. Seen a fox track today. Birds are coming too. Fine weather.

15th. The no-salt diet is hitting me pretty hard. Eyes are getting worse, in the bunk most of the time.

17th. Rain yesterday and today.

20th. Finest weather continues again, cooking the last grub, got to stay in bunk most of the time—my legs won't carry me very far. My eyes are useless for hunting, the rest of my body also useless. I believe my time has come. My belongings, everything I got I give to Joseph Pellerine of Dry Bay; if not alive, to Paul Swartzkoph, Alsek River. April 22, 1918. V. Swanson.

YAKUTAT (p.o., 299pop. est. 1938) is a fishing village and cannery on Yakutat Bay about 216 miles northwest of Juneau, its population largely Native. Seaplanes may land in the bay. The town is connected by railway with Situk and Lost River fishing camps. It has no hotel, but two restaurants. There is a Swedish Lutheran church, Salvation Army post, and government school for Natives. Game fishing is good at Situk and Lost River; and ducks, geese, and hens are abundant. On Kontonk Island is a fox farm.

Yakutat Bay is an indentation in an otherwise unbroken coastline between Cross Sound and Controller Bay, 40 miles southeast of Mt. St. Elias, and near the point where the boundary line between Canada and Alaska turns northward. The distance from its mouth to its head is about 75 miles, and it contains an inner bay, a true fiord, with mountains 2000 to 3000 ft. that rise abruptly from the sea. It was visited by La Pérouse, Portlock, and Spanish explorers in the eighteenth century, each of whom gave it a different name. In 1791 Malaspina named this water Puerto del Desengaño when it proved not to be the northwest passage he was seeking. "Desengaño" was translated into English as "Disenchantment." Bering is supposed to have visited this spot. In 1795 the Russians established a penal colony near Ankau Creek, on the southeast shore of the bay, called Glory of Russia after Admiral Billings' vessel. It was fortified with a blockhouse and stockade, but suffered perpetual attacks from the Natives until it was finally exterminated by them in 1803-4. A few cellar holes still mark the site. The bay has been visited by more geographical expeditions than any other point on the Alaska coast, because of its unusual interest to students of glacial action. Professor I. C. Russell's expedition of 1890 investigated its glaciers, and many other expeditions, including the famous one headed by Lawrence Martin, have explored and mapped the region. In 1898-9 many prospectors crossed over its glaciers in search of a route to the Yukon gold fields. Not very many years ago—some 10,000 perhaps—the entire bay was covered by one vast glacier. In 1899 occurred here an earthquake that profoundly changed the faces of many glaciers in southeastern Alaska.

Malaspina Glacier was not recognized as a glacier until 1880. It was named Malaspina Plateau by Dall in 1874. In 1794, Vancouver described the region as having "a high abrupt cliffy point forming the west point of a bay, bounded by a solid body of ice or frozen snow," and drew on his map a body of water, Icy Bay. Today that name is given to a small body of water between Malaspina and Guyat glaciers. Cape Yakataga is a post office in the modern Icy Bay. According to Native tradition, a large bay once existed here, with a Native village on its bank. One day an Indian came rushing home crying, "Quick! Quick! The ice is coming!" Ice filled the bay and engulfed the village, and in the hundred years that passed after this the glacier accumulated a covering of moraine, forest, and snow, so that it was not recognized as such until Dall explored it. Malaspina has part of its top above the snow line (2,500 ft.), but the bulk of it reaches only 1,500 ft. It is a perfect example of a type of glacier that was very common during the ice age in the Rocky Mountains, Norway, and Great Britain, but has become very rare—the piedmont glacier. Such glaciers pass out beyond their mountain valleys onto level land and become expanded bulbs.

Mt. St. Elias (18,008alt.), the first portion of the Alaska mainland sighted by Bering on St. Elias' day, July 16, 1741, is situated on the international boundary. It was first scaled by the Duke of the Abruzzi in 1897. Prince Luigi, Duke of the Abruzzi, an Italian nobleman, was born in Madrid in 1873. He led two expeditions to the North Pole, explored the sources of the Webo Shebeli River in Abyssinia, and climbed many perilous mountains in Africa and India. His account of the ascent of Mt. St. Elias was published in 1900, and the proceeds of the book were given to establish an insurance fund for Italian guides.

About 100 miles west of Mt. St. Elias is Bering Glacier, named by the Coast Survey in 1880. In the summer of 1938 the Harvard University-National Geographic Society Flight Expedition discovered that Bering Glacier is connected with Hubbard and Malaspina glaciers by an enormous unnamed glacier, concealed behind the coastal range, from 5,000 to 7,000 feet high and over 100 miles long. The expedition made a complete photographic record of the glacier. The final flight of the expedition, planned and prepared for months in advance under the leadership of twenty-seven-year-old Bradford Washburn, proved that the combined glacier system of the Mt. St. Elias Range is a mammoth expanse of unbroken ice several thousand feet deep, stretching almost from Cape St. Elias southward and eastward for 235 miles to the Alsek River Valley, and is without question the largest glacier system in the world outside the Polar ice caps.

Near the north edge of Bering Glacier is MT. STELLER (10,000 alt.) named after Georg Wilhelm Steller, naturalist with Bering on his second voyage (1741). Georg Steller was born at Windsheim (Germany) in 1709. At twenty-three he was a brilliant theologian, naturalist, and physician. At that time the Russian court was the greatest patron of learning in Europe. Steller arrived at St. Petersburg in 1734, where he met Vitus Bering. Steller accompanied Bering on his second expedition of discovery and died on the return trip at Tyumen, Siberia, in 1741. He was the first naturalist to travel the Pacific Coast north of Japan and California. His work, *De bestiis marinis,* contains thorough descriptions of the hitherto unknown fur seal, sea lion, sea otter, and sea cow. For one hundred and fifty years this volume contained the only authoritative information on these valuable fur animals.

Bering anchored off KAYAK ISLAND in July, 1741, and it was here that he looked toward the country he had discovered and "shrugged his shoulders in the presence of all on board." The island was named for its resemblance to an Eskimo skin boat.

On CONTROLLER BAY is KATALLA (p.o., 44 pop.), a village on Katalla River about 75 miles southeast of Cordova, its Indian name meaning "bay." It is the center of the Katalla petroleum fields. Few signs remain of the 5,000 "oil maggots" who once swarmed into this region, freighting their supplies from Kayak Island, the nearest port. In 1908 the Federal government withdrew these oil lands from private hands. Some trapping is done in the vicinity.

On the beach at Katalla lay for some years the bones of the famous steamer *Portland* which, arriving in Seattle with "a ton of gold," started the Alaska gold rush of 1898. Christened *Haytian Republic* in 1885, the vessel was seized for carrying ammunition to rebels in Haiti during the Hippolyte rebellion, and an attempt was made to sink her as she left Port au Prince. She turned up on the Pacific Coast in 1889 as a cannery boat and passenger steamer. Found smuggling Chinese and opium, she was seized and sold by the government. Remodeled and given the name of *Portland,* she steamed into Seattle with a cargo of gold in 1897. In 1910, she was wrecked on the Katalla beach and torn to pieces, appropriately enough, for the brass that was in her.

About 160 miles off the coast, almost due south of Cordova, is MIDDLETON ISLAND, named after Henry Middleton, American minister to Russia 1820-30, who negotiated a treaty with Russia in 1824 that regulated trade and fisheries on the Pacific Ocean and northwest coast and established the line of 54° 40′ as the southern limit of Russian expansion. The Indian name of the island, Achakoo or Atchaka, means "without a harbor," as there is no safe anchorage along its coast for boats of any kind. The island is off the course of ships, and for months at a time no smoke or sail is seen. Since 1890 Middleton has been leased by the government to various private concerns as a breeding farm for blue foxes, and several voluntary Crusoes have lived there. One such, a Bostonian who emigrated to the Yukon during the gold rush, lived for some time with his wife on the island. Once a year he brought from Cordova a year's file of the *Boston Transcript,* and each morning after breakfast he and his wife eagerly read the paper—exactly one year after publication.

HINCHINBROOK ISLAND is on the east side of the entrance to PRINCE WILLIAM SOUND. NUCHEK, a native village on the island, was discovered by Cook between 1776 and 1779. The Russians built a fort here in 1793 and fitted out two expeditions to explore the Copper River Valley, both of which failed. Baranof established Redoubt St. Constantine at Nuchek, which grew to a large town of 3,000 population, with a fortress, trading stores, a Greek Orthodox church, and a harbor from which put forth great fleets of bidarkas. Serebevinkof, a half-breed and a graduate of a school of commercial navigation in St. Petersburg, used Nuchek as his starting point for an expedition up the Copper River Valley in 1847. He was probably murdered by the Chitina Indians, as his notebook later turned up in the hands of coast Indians.

The Chugachimutes were apparently an intrusion of an Eskimo tribe, surrounded by hostile Indians, and they gave characteristically Eskimauan names, some of which still persist, to rivers and bays of the vicinity. They were not numerous—never more than about 500, according to contemporary observers, from around 1818 to Petrof's census of 1880. They used stone tools—copper tools were rare among them, and obtained only by trade. They traveled long distances in skin canoes—bidarkas—with inflated seal or bear bladders as life preservers, lighted their houses with stone lamps, made dishes of bark or wood fiber, and used the cambium of the hemlock as a condiment in cooking. The Chugach have become completely merged with neighboring Indian groups.

A Chugach love potion was made of "Alaska cotton," thoroughly dried and powdered. Mix the powdered herb with seal oil to the consistency of a paste, place the paste inside your lip, approach the girl of your choice, and allow your breath to drift across her nostrils. If this fails to arouse her to immediate love, a more direct remedy is recommended. Dry and powder a jellyfish and sprinkle it at strategic points inside her sleeping blanket—the medicine is guaranteed to sting her to instant passion. Such compounds were forbidden to unmarried couples. If a Chugach couple decided to marry, they were put on probation for one moon. While sleeping each night together on a great bearskin, they were required to abstain from the use of seal oil and from love, and to bathe each morning in the ocean. At the end of the month, the shaman would examine the bearskin. If its condition showed that the pair had been chaste, a potlatch was held and the marriage consummated.

Approaching Cordova from the sea, the mouth of the Copper River Valley looks like a single vast mountain range, down the sides of which move countless glaciers. The delta of the river is 50 miles wide, and the flats at the mouth of the river are cut up into innumerable islands by tidal sloughs and small glacial streams. The river is navigable for small boats, drawing three to four feet of water at high tide. When the tide recedes it uncovers some 250 square miles of mud flats, on which live millions of ducks, geese, and other water birds in a game reservation. Before the founding of the town there were two canneries on the delta, at Orca and at Kokinhenic. The valley is an ancient lake bed, from the center of which erupted the brand-new (geologically speaking) Wrangell Mountains.

CORDOVA (p.o., 980 pop. est. 1500 in 1938) is an incorporated town on Cordova Bay, 1,599 miles from Seattle, 440 miles northwest of Juneau, 50 miles southeast of Valdez. As the terminus of the Copper River and Northwestern Railway before it closed, Cordova was the distributing center for the rich copper-mining area around Kennicott, the copper and gold workings in the Wrangell Mountains, the former Katalla oil wells and the Bering coal fields, the Chugach National Forest, and the Prince William Sound fishing region—a region with a combined population of something over 3,300. Its principal industries since the closing of the railroad are salmon and crab canning, clam digging, and lumbering. In 1938 a sheltered harbor 10 feet deep, protected by breakwaters, was completed at a cost of $295,000. The *Cordova Daily Times* is published here. Cordova contains about three hundred houses, four churches, two banks, a grade and a high school, an Indian school, a movie house, public library, hospital, two hotels, stores, and all the conveniences of a much larger town in the States. The Red Dragon Library is housed in one of the oldest buildings in Cordova.

Puerto Cordova y Cordova was first named by Caamaño in 1792 and the name first published by Vancouver in 1798. The presence of pure copper in this region had been long known, and great "shields" of copper passed from the Copper River Indians in trade as far south as Sitka. Captain Abercrombie's expedition of 1884 made the country known. His second expedition in 1898 was occasioned by friction between American miners and the Canadian government and the desire of finding an "all-American route" to the Yukon. After 1901, according to Abercrombie, "the entire valley, embracing the main and sub-drainage of the Copper River, was as well known as that of most any mining district in Montana." In the years between 1898-1901 "the entire country had been explored, a road and bridges built, over which traffic could be continued during the entire season, roadhouses had been built and several hay ranches located. The gross expense to the government had been $193,000. $185,000 worth of placer gold had been taken out, and million-dollar copper mines were about to be discovered." Yet in 1898 the prospectors attempting to reach the Yukon via the Copper River Valley and the Valdez trail must have expended something like $2,000,000, for almost no return. In his report Abercrombie recommended the construction of a railroad to the Yukon.

A launch may be hired at Cordova to visit the PORT WELLS and COLLEGE FIORD district of Prince William Sound, 80 miles west of Cordova. This is a glacier region, full of ice streams, waterfalls, islands, bird colonies, mountain goats, and bear.

An auto road of 7 miles leads to LAKE EYAK and EYAK (366 pop.), from which a foot trail leads 3 miles to POWER CREEK BASIN, a U-shaped valley. MT. EYAK (2,500 alt.) can be climbed by means of a 3-mile trail—from its summit is a magnificent view of the valley.

Cordova to Chitina via the Copper River and Northwestern Railroad *

In 1904 surveys were being made for a railroad from tidewater to Eagle on the Yukon. The energetic Irishman, Michael J. Heney, who had been the contracting constructor of the White Pass and Yukon railway, after going over various routes with J. H. McPherson, engineer, and Jack Dalton, sourdough, called on Daniel Guggenheim and tried to convince him that Orca (Cordova) was the desirable terminus. The Guggenheims began to build their railroad from Katalla, as that seemed to offer easiest access to the Kennicott copper region and the Bering river coal fields. But Michael Heney started construction at Cordova without waiting for financial backing. The Katalla route proved disastrous—the wharf and artificial breakwater were swept away by floods. After the Guggenheim-Morgan syndicate received a wire notifying them of the disaster, the story goes that J. P. Morgan called a conference, and, banging his fist on a table, shouted, "Whatever the route, we've got to bring that copper and coal together!" Heney's right-of-way was purchased by the syndicate, and in 1908 he was given the contract to build the railroad. He sank caissons 150 feet into beds of rushing streams, built a four-span bridge across the face of a moving glacier, and sitting in the doorway of his tent, bottle at side, pipe in fist, watched every shovelful of earth and every spike driven, and urged the work forward with choice language. Cordova became a boom town, full of railroad men, laborers, surveyors, clerks, lumberjacks, gamblers, with twenty-six saloons on its main street, the queen of them all the Red Dragon (now the public library), where men roistered weekdays and worshiped Sundays before an altar let down by ropes from the beams, dropping silver dollars into a beer mug passed by the sky pilot. The Copper River and Northwestern Railroad, 131 miles to Chitina, with a branch line of 65 miles from Chitina to Kennicott, was completed in 1911 at a cost of $23,500,000, and in a few years had hauled from the Kennecott mine $100,000,000 worth of copper ore. In 1938, the ore having been exhausted, railroad operations were suspended.

The turbulent, glacial Copper River was discovered by Nagaief in 1781. It was called Copper River successively in the Native dialect,

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* The Copper River and Northwestern Railroad was closed in 1938, but the route is of historic interest. (For Chitina, see Part II, 4.)

in Russian, and in English. It was later called Rio de los Perdidos (river of the damned) by Spanish explorers. Baranof was attracted by copper ingots in possession of the Chitina Indians, but was unable to find their source. In 1898 E. J. Cooper of the Calumet and Hecla Mining Company of Boston also searched the region for the source of the copper, without success. The following year two prospectors got old Chief Nicolai to show them the location of valuable deposits of bornite, containing eighty-five percent copper, and the wild hunt for a "copper mountain" was on.

At the lower end of ABERCROMBIE RAPIDS, just before reaching Mile 52, the railroad runs for nearly a quarter-mile over GRINNELL GLACIER, so thickly covered with moraine and densely thicketed with cottonwood and alder that few realize a glacier is underneath.

CHILDS GLACIER enters Copper River Valley from the west at the head of the delta, and ends in the Copper River in a vertical ice cliff 200 to 300 feet high. If set before it, the Capitol Building at Washington would about reach its top. This cliff (all one sees of the glacier from the railroad) is so imposing that Childs looks larger than Miles Glacier farther on, but actually it is only half as large, with an ice tongue 10 or 12 miles long. It expands from a mountain valley into a small imperfect bulb that increases from 1⅛ miles to 3 miles in width. As early as 1850 the glacier was observed by a Russian geologist, C. Grewingk. C. C. Holt ascended the Copper River in 1882, but failed to describe the glacier. In July, 1884, Abercrombie ran the rapids in front of the glacier on his return trip, and estimated that it delivered 8,160,768,000 pounds of ice to the river annually. When he again ascended the river in 1898 Abercrombie described a beach 500 to 600 yards wide between the glacier and the river, but the water may have been very low. The river undercuts the glacier, and in the spring when an iceberg tumbles into the water the resulting wave sometimes tosses iceblocks, weighing ten tons, on the bank, as well as gravel, sand, and boulders.

Paralleling the course of the railroad for many miles can be seen a brush-grown corduroy wagon road and fallen bridges.

Just north of Childs Glacier, 25 miles above the mouth of Copper River, is MILES GLACIER, following westward into the valley from its source in the Chugach Mountains. It spreads out into a great bulb its width increasing from 2½ to 6½ miles, with a precipitous ice wall on its south, and a moraine-covered piedmont area on its north. It ends in a vertical ice cliff, discharging icebergs into the lakelike expanse of Copper River, partly damned by Childs Glacier. Seen from the railway it is less impressive than Childs, as it is much farther away. In 1885 this glacier was closer to where the railroad bridge now stands than Childs is now. In 1884 Abercrombie, finding the Copper River impossible to navigate, cut a trail to this glacier and traveled over its surface for twelve miles, taking three months for a journey of twenty miles. Miles Glacier has advanced and retreated many times since 1884, several times threatening the right-of-way. Before the bridge was built over Abercrombie Canyon, prospectors crossed over the glacier. At 131 m. is Chitina. (See Part II, 4.)

4. THE RICHARDSON TRAIL

Valdez—Chitina—Kennicott—Gulkana—Black Rapids Glacier—Big Delta.

CORDOVA TO VALDEZ BY OCEAN STEAMER

LEAVING CORDOVA, the steamer continues through Prince William Sound and docks at Valdez, the coast terminus of the Richardson Highway.

Valdez (p.o., 550 pop. est. 1938) on Prince William Sound is the headquarters of the Third Judicial Division. Approximately 1,600 miles by regular steamship lane from Seattle, Valdez has an excellent landlocked harbor with an approximate area of 45 square miles. The dredging of a small boat and seaplane basin 12 feet deep, at an estimated cost of $68,500, has been recommended. There is an airport within the corporate limits of the town. Robe Lake, three miles from the town, parallel with the Richardson Highway, is equipped as a landing basis for seaplanes and pontoon planes. Planes equipped with wheels, pontoons, or skis may operate from Valdez the year round. The bay is never frozen, wheel-equipped planes may land on the beach at any season, and in summer ski planes may take off from the mud flats. This last is especially advantageous, making it possible to fly supplies to glacial mining districts during the summer months. The Washburn expedition flew to Walsh Glacier (Canada) in June by this means.

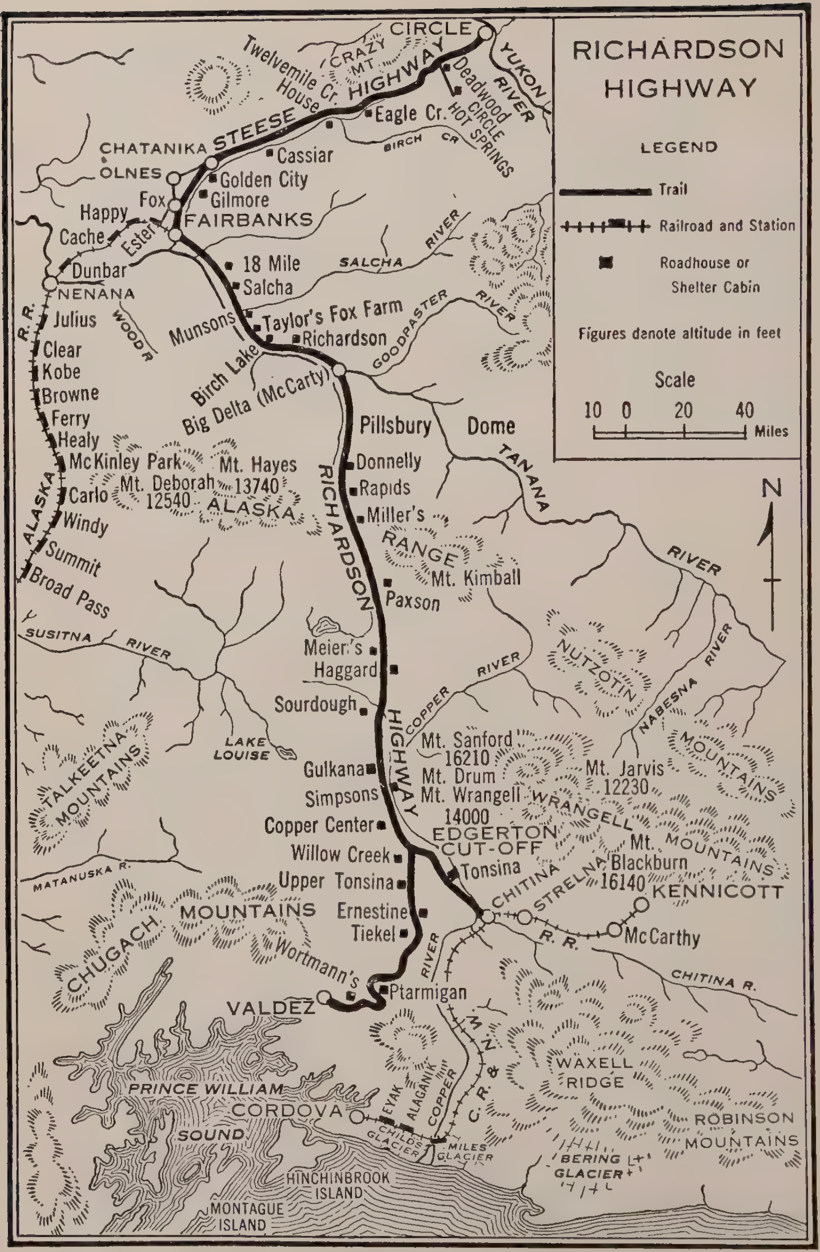
The principal industry at Valdez is gold mining. There are numerous small mines in the immediate vicinity of the town, which is also a supply center for the large mining area to the north. There are 15 blue-fox farms in Prince William Sound; and fox, mink, marten and land otter skins are regularly shipped from this area. The town is an outfitting point for big-game hunting. There are several good hotels, four churches, fraternal organizations, a public library, and an American Legion museum. There are schools for white and Native children and an orphanage. The *Valdez Miner,* a weekly newspaper, is published here.

ELLAMAR is a fishing village and cannery 20 miles south of Valdez, with a dance pavilion frequently visited by the people of Valdez. TATILEK (p.o., 70pop.) is a Native village near Ellamar.

In 1778 Captain Cook sailed into the northern arm of the Gulf of Alaska and named it Prince William Sound. In 1790, Puerto de Valdes was so named by Fidalgo. Whidbey entered Puerto de Valdes in 1794 but did not observe the glacier. The tent city that grew up in the gold-rush days was known as Copper City until 1898, when the name was changed to Valdez.

In the 1890's Americans entering the Klondike by the Skagway route found it galling to pay duty to the Canadian government. Rumors of an old Russian trail to the Interior circulated, and guidebooks were published showing imaginary "all-American" routes to the Yukon. In 1898 Capt. William Ralph Abercrombie was sent to the Copper River Valley to verify rumors of such a trail. He returned to the district in 1899 and thoroughly explored and mapped the area, discovered a feasible route to the Interior, and reported generally on the flora and fauna, the minerals, and the Natives.

In the winter of 1898, 3,000 prospectors crossed Valdez Glacier on their way to the Yukon and 3,000 more arrived during the summer. All but 200 or 300 (and the dead) came back the same way that fall. Captain Abercrombie saw these men in '98 and again in '99 and pictures them as a terrifyingly incompetent mass of humanity, wholly unprepared physically and morally for what they had to face. Landed at Port Valdez the first problem was to get their goods from the ship to the high-water line. Not until Abercrombie's men had


RICHARDSON HIGHWAY
LEGEND
Trail
Railroad and Station
Roadhouse or Shelter Cabin
Figures denote altitude in feet
Scale
10 0 20 40
Miles
N
CIRCLE
CRAZY MT
Twelvemile Cr. House
STEESE HIGHWAY
Deadwood
CIRCLE HOT SPRINGS
YUKON RIVER
Eagle Cr.
BIRCH CR
CHATANIKA
Cassiar
OLNES
Golden City
Fox
Gilmore
Happy
FAIRBANKS
Cache
Ester
Dunbar
18 Mile
SALCHA RIVER
Salcha
NENANA
Julius
WOOD R
Munsons
Taylor's Fox Farm
GOODPASTER RIVER
R.R.
Clear
Kobe
Browne
Ferry
Healy
McKinley Park
Carlo
Windy
Summit
Broad Pass
ALASKA
Birch Lake
Richardson
Big Delta (McCarty)
Pillsbury
Dome
TANANA RIVER
Donnelly
Mt. Hayes 13740
Mt. Deborah 12540
ALASKA
RICHARDSON
Rapids
Miller's
RANGE
Mt. Kimball
Paxson
SUSITNA RIVER
Meier's
Haggard
NUTZOTIN
NABESNA RIVER
Sourdough
COPPER RIVER
HIGHWAY
LAKE LOUISE
Gulkana
Simpsons
Copper Center
Willow Creek
Mt. Sanford 16210
Mt. Drum
Mt. Wrangell 14000
Mt. Jarvis 12230
MOUNTAINS
WRANGELL MOUNTAINS
EDGERTON CUT-OFF
Mt. Blackburn 16140
TALKEETNA MOUNTAINS
MATANUSKA R.
Upper Tonsina
Tonsina
CHITINA
STRELNA
KENNICOTT
CHUGACH MOUNTAINS
Ernestine
Tiekel
R.R.
McCarthy
Wortmann's
RIVER
CHITINA R.
Ptarmigan
VALDEZ
C.R. & N.W.
WAXELL RIDGE
PRINCE WILLIAM SOUND
CORDOVA
EYAK
ALAGANIK
COPPER
ROBINSON MOUNTAINS
CHILDS GLACIER
MILES GLACIER
BERING GLACIER
HINCHINBROOK ISLAND
MONTAGUE ISLAND

strapped their packs to their backs did the prospectors adopt so simple an expedient. Then there was worse confusion. Most of the packs were so poorly tied that they burst when dropped from the carrier's shoulders, and nobody could be sure what belonged to whom. One group had imported a contraption called a "steam sled," a remarkable apparatus invented by a Yankee to mush over the glacier by steam. Much time was consumed in putting the steam sled together; but when steam was turned on, it was found to be incapable of drawing its own weight over the snow. Even had it worked, there was no fuel on the glacier, so the steam sled was allowed to rust away on the flats.

Few of the prospectors knew enough to supply themselves with the two elementary necessities—wood and water. Many were blinded by the blazing northern sun reflected on the snow. Usually when this happened to one of a pair of partners the partnership was dissolved at once. Physically exhausted and nerves on edge, they fought terribly among themselves. They cursed the transportation companies for having brought them to Alaska, and Abercrombie and the army for not having gone ahead and cut trails. They were particularly bitter about the lack of mail facilities.

Returning in 1899 Abercrombie found that a graveyard had sprung up since the previous winter. The tent city was crowded with destitute prospectors. Many had gone mad and talked of a "glacier demon," an unearthly being that threw men off the glacier. "Many of these people I had met and known the year before were so changed in their appearance, with their long hair hanging down their shoulders and beards covering their entire face, that I do not think I recognized one of them. They were crowded together, from 15 to 20 in log cabins 12 by 15, in the center of which was a stove. On the floor of the cabin at night they would spread their blankets and lie down, packed like sardines in a box. Facilities for bathing there were none. Some of them were more or less afflicted with scurvy, while not a few of them had frost-bitten hands, faces, and feet. Their footwear in some cases consisted of the tops of rubber boots that had been cut off by Brown [Quartermaster's Agent Charles Brown] and manufactured into shoes. Around their feet they had wound strips of gunny sacks which were used in place of socks. Across the cabin from side to side were suspended ropes on which were hung various articles of apparel that had become wet in wallowing through the deep snow and had been hung up at night to dry. The odor emanating from these articles of clothing, the sore feet of those who were frozen, and the saliva and breath of those afflicted with scurvy gave forth a stench that was simply poisonous as well as sickening to a man in good health, and sure death to one in ill health." Abercrombie fed four hundred and eighty destitute miners "who included all nationalities, professions and classes, white and black. Their failure was due to their advanced age, the average being 47 years, and lack of knowledge of mining. Ninety-five percent had failed in business ventures many times, and joined the gold rush in the hope that they might be one of the lucky men to strike it rich. Most of them were taken back to Seattle, and the rest were employed on the expedition, in addition to the number authorized at the beginning."

The first hanging in Alaska took place at Valdez on New Year's morning, 1898. "Doc" Tanner had crept up on his three partners as they were sitting on a box in the tent, the light of a candle throwing their shadows on the canvas. He shot two of them, Call and Stinchfield, through the canvas. The second shot put out the light and the remaining partner, Dunn, threw himself forward on his stomach and was saved. Tanner was seized and given a trial which lasted from eleven that night until four in the morning. Five men in the settlement refused to have anything to do with the case, one man was appointed judge and all the others sat as jurors. At daybreak they broke a trail to a tree some distance from the cabin. Dunn asked to be allowed to place the noose around Tanner's neck but his hands trembled so violently someone else had to do it. Tanner asked that his clothes be given to a man named Reed, and Reed answered from the crowd, "I don't want your clothes. I wouldn't wear them." When asked if he had anything to say, Tanner answered, "Gentlemen, you're hanging the best man with a six shooter that ever came to Alaska or any other country. I want only one shot to a man. All right boys; fire at it."

Valdez participated in the boom of 1904, when gold was discovered near Fairbanks, and again in the Copper Valley rush of 1907, when as many as sixty boats plied out of Valdez harbor. In 1910 it had about 1,500 inhabitants. Nine railroad companies, none of which ever built the projected road, selected Valdez as their ocean terminus. Long sled trains carrying as many as six hundred cases of eggs, sacked to prevent freezing, used to leave Valdez daily for points in the Interior, and more than one thousand tons of grain and hay were transported each year over the trail at rates of from 10 cents to one dollar a pound.

In 1915 a great fire at Valdez destroyed most of the business section. The *Valdez Prospector* rescued some type from the burning building and got out an extra on wrapping paper, containing such items as, "McKinley Street will be rebuilt immediately and will be the first street in Alaska"; "Mrs. Chas. Bush saved the baby and a few other little things from her rooms in the Crawford Building."

VALDEZ TO WILLOW CREEK BY THE RICHARDSON HIGHWAY

The 371 miles from Valdez to Fairbanks are made by motor coach in a day and a half, with an overnight stop in a comfortable roadhouse. The coach leaves Valdez on arrival of all passenger boats. Season, June 15 to October 15 (closed in winter). Reservations should be made in advance. The return coach leaves Fairbanks every Thursday at 8 A.M., making an overnight stop and arriving in Valdez Friday noon. If the coach is missed, rides may occasionally be caught on trucks and private automobiles or the trip made by plane. Mileposts mark the highway at frequent intervals. Gasoline and oil may be purchased at roadhouses marked thus (*). At Fairbanks begins the Steese Highway to Circle (see Part II, 6).

At Willow Creek is the junction of the highway with the Edgerton Cutoff to Chitina. In view of the abandoning of the railroad from Cordova there has been proposed a 60-mile extension of the Edgerton Cutoff, or a limited operation of the railroad from Chitina to Kennicott.

The Richardson Highway, still known to old-timers as the Richardson Trail, was until the construction of the Alaska Railroad the most important means of access to the Interior, especially in winter, when the Yukon was closed to navigation. Before the days of the automobile, the trip took eight days by fast bobsled stage, and cost $150, without meals or lodging, and with a free baggage allowance of only twenty-five pounds.

From sea level the highway climbs over the Chugach Range, past the Wrangell Mountains, then over the Alaska Range, at one point reaching an altitude of 3,310 feet, and finally descends into the rich farming and mining land of Tanana Valley. It passes varicolored mountains, glaciers, waterfalls, fields of flowers, rolling hill land, forests, Indian villages, lakes and rivers crammed with fish, and a wild-game country full of bear, moose, mountain sheep and game birds.

In 1899 Capt. William R. Abercrombie headed a military exploring expedition to open a military road from Valdez as far as Copper Center, and thence by the most direct route to Eagle City on the Yukon. In 1901 the War Department constructed a pack trail at a cost of almost $100,000 from Valdez to Eagle. By 1904 the pack trail had been extended to Fairbanks. In 1907, under the direction of W. P. Richardson, United States army general, and first president of the Alaska Road Commission, the trail from Valdez to Fairbanks was surveyed and improved so that it was passable by horse sled. Three years later it was possible for wagons to make the trip, and in 1913 the first automobile made a through trip from the coast to Fairbanks. From 1920 to 1927, under direction of J. G. Steese, United States army general, it was improved, widened and reconstructed to automobile highway standards, and feeder and branch roads were built. Sections of the highway are in local use during winter months. It is not kept open throughout its length during the winter.

Leaving VALDEZ, the highway passes on the left Valdez Glacier, 0.5m. (33alt.). In summer the melting ice causes disastrous floods, so that the town must be protected by a dyke. The road skirts the glacier, crossing twenty-one streams that flow from it. The trail of '98 led directly over the glacier and does not touch the present road except at Copper Center.

In 1898 Abercrombie followed the route over the glacier. "The wind was blowing a hurricane through the pass into the Interior, accompanied by gusts of sleet and snow, which, freezing as fast as they struck, coated men and beasts with an armour of ice. . . . To stand still was impossible. The only thing left to do was to simply drift with the blizzard, and this I did. Fortunately for the expedition the point at which the summit was reached was exactly in the middle of the pass, and whenever an attempt was made to veer either to the right or left from the true course of following through the pass the sleet cut the faces of the men so they would turn their backs to the storm and proceed in the proper direction. Had the wind blown into the pass from the right or left the expedition would have simply drifted out onto the great glacial fields. . . . After some five or six hours' travel in the howling storm, where it was impossible to hear or see a comrade, a high and rocky cliff was finally rounded and the expedition beheld the most beautiful sight I have ever witnessed. The change was almost magical. Two yards after passing behind the shelter of this rocky cliff there was a perfect haven of rest and sunshine, while out of the pass rushed the howling storm like the water out of the nozzle of a fire hose. Throwing ourselves on the snow in the sunshine, we stretched ourselves at full length and enjoyed the rest which only men can who have been battling for their existence. As if understanding the situation, the poor miserable-looking pack ponies, their manes and tails all clotted with ice, lay down in the soft snow and grunted with satisfaction as the rays of the sun peeled the coating of ice off their bodies. . . . I had now successfully crossed the Valdez Glacier at a season of the year when it was universally conceded to be impassable for man, making the journey in 29 consecutive hours of practically continuous work, without sleep, rest or shelter."

The prospectors made a series of six camps on the terraces or benches of the glacier, and at each camp exhausted gold seekers gave up the journey. First Bench was on the southeast side of the glacier, and a prospector records that a baby got this far in 1898—what became of it, and whether it got any farther, history does not record. Third Bench was two miles beyond First Bench with a rise of 25 feet in 100. At this point sleds were dragged by block and tackle up a slope of 1,500 feet that quickly increased from an angle of 30 degrees to one of 45. Sixth Bench was the summit of the glacier, 19 miles above its seaward edge and at an elevation of 4,800 feet.

At the summit the prospector faced the problem of getting down the other side. "It was said that men had often lost control of their sleds upon this slope and had been caught under their runners, where they would have died but for timely assistance. Sometimes they had escaped by jumping to one side or the other when the pace became too hot for them and permitting their sleds to run away with their heavy loads, in which case the sleds dashed down the slope. . . . If they ran against any unyielding obstruction, of course they and their contents were dashed into useless fragments."

Nine miles from the summit in 1898-9 there was a camp of about 100 tents on the Klutina River. Many prospectors attempting to cross its swift, icy waters with packs on their backs lost their footing and drowned in knee-deep water. Three miles from Twelvemile Camp prospectors erected a sawmill, and at Saw Mill Camp built scows, skiffs, and rude rafts to float down the river. The river was constantly full of goods from overturned boats—sacks of flour would float for miles, the outside half-inch caking and protecting the rest, so that if a flour sack fetched up on a sandbar it was worth rescuing. Because of the many disasters prospectors attempted to brake their boats with long lines from shore, hauled on by six men. If the boat went down the wrong branch, it was almost impossible to haul it back against the current to send it down the right branch. Some parties had to work empty boats upstream for second and third loads, one man, at the risk of his life, remaining in the boat, with a pole. At Lake Klutina the prospectors established what they called Klutina City, consisting of 100 or so tents, a log hut or two, and a single street dubbed Mosquito Avenue. Many prospectors preferred to camp above the rapids and wait for the ice to form rather than attempt the dangerous journey by boat to Copper Center.

Along part of the trail a mail route was maintained. "Jackson the Squaw Man" delivered all mail inside the Copper River district for one dollar a month per person during the summer. "When the mail boat came down the river, all hands attended the delivery. Sometimes 2,000 letters were brought in at one time in packages of convenient size, arranged alphabetically and spread on a tarpaulin, sometimes inside a tent, and at other times in any convenient place outside. After the names were all read off and all letters claimed that belonged to members of that camp, the balance were gathered up, put in a sack, and, if the camp happened to be on a river or lake, thrown in a boat, in which the carriers hurried off to the next camp, where the same process was repeated."

The Highway from Valdez to Copper Center was planned by Abercrombie to avoid the difficulties of the direct route. At 5m. it crosses LOWE RIVER (70alt.), named for Lieut. P. G. Lowe whom Abercrombie called "a man to be killed but not conquered." COMFORT 10m. (251alt.) is an abandoned roadhouse. Camp Comfort was the first stop for travelers on this road by Ed S. Orr's stage line—four-horse bobsleds with room for nine passengers and a driver: "All stages equipped with abundance of fur robes and carbon-heated foot warmers; stock changed every 20 miles." In 1909 the roadhouse was described as "a new structure, built of finished timber, nestling among the trees, well protected from the wind and snow storms. Good meals are served and a comfortable bed can be had by the belated traveler."

The road leaves the forest and climbs to KEYSTONE CANYON 13m. (307alt.) named by Abercrombie, presumably for Pennsylvania, the "Keystone" state. From the almost perpendicular walls of the canyon Lowe River can be seen far below. In 1907 it was necessary to haul the stage bodily over the rocks with a block and tackle. From 1906 to 1912, Keystone Canyon was a familiar name throughout the United States. The Morgan-Guggenheim interests in Alaska, later known as the Alaska Syndicate, had a grant to build a railroad along the Copper River Valley, connecting the Gulf of Alaska with the navigable waters of the Interior. The coastline presented difficult engineering problems and right-of-ways were taken simultaneously from Valdez and Katalla, as it was not known which of these would prove the less difficult. The railroad which was finally built ran from Cordova to the copper mines at Kennicott. The right of way through Keystone Canyon was abandoned, as was, apparently, all intention of building a railroad to the Interior. The Alaska-Reynolds Company, backed by the people of Valdez, the governor of Alaska, and a strong antimonopolistic feeling in the United States, made an unsuccessful attempt to thwart the Alaska Syndicate and build a railroad to the Interior. Surveyors sent into Keystone Canyon were fired on, and one man was killed. The trial of the men responsible for the killing was held under charges of bribery and intimidation, and the Keystone Canyon episode became a great issue between the antimonopolistic, pro-conservation forces and their opponents. In *The Iron Trail,* Rex Beach tells the story from the point of view of the anticonservationists.

HORSETAIL FALLS 14m. (370alt.) is over 300 feet high. A great rent in the side of a mountain, visible on clear days from this point, is said to have been made by a meteor. The road continues to climb past BRIDAL VEIL FALLS 14.3m. (400alt.) and SNOWSLIDE GULCH 15m. (600alt.) about 300 feet above the river, where the rock has been swept clean by snow, and where the little bridge must be replaced annually on account of the tremendous slides, then over BEAR CREEK SUSPENSION BRIDGE 17m. (650alt.). In 1899 there was a mining camp of eight or ten log cabins on Bear Creek and a post office, Belcaro. WORTMAN'S 19m. (662alt.) is an abandoned roadhouse, the end of the first day's journey in the old trail days. The only visitors now are occasional mountain goats. This roadhouse had accommodation for 100 persons and stables for 100 horses. It contained, beside the bedrooms, bath, and bar, a general store where jewelry was sold and where the traveler could even get his watch repaired. The proprietor was P. Magnuson, a '98er.

At Sheep Creek Suspension Bridge 19.3m. (650alt.) begins a climb of over 2,000 feet in about 6 miles, leading past Dead Horse Gulch 25.4m. (2,700alt.) where the skeletons of pack horses may still occasionally be seen. Such animals have left their bones in many parts of southern Alaska. They were regularly taken over what would appear to be the most impassable routes. Army exploring expeditions in southern Alaska reported that the life of a pack beast was any place from a few days to a few weeks. The animals soon fell victims to a "puzzling" disease. A beast that had been carrying its pack willingly enough would suddenly stop in its tracks and give every evidence of suffering and complete exhaustion. No cure was known for this and the animals had to be shot. In one case the Indian guide had been so terrified by this procedure that he found himself unable to lead the white men further. Another expedition faced complete failure when kerosene leaked into the horses' feed and the animals would not eat it. As the men could not take the smell out of the oats they saturated gunny sacks with kerosene and rubbed the animals down with them. Unable to detect any special odor in their food, the horses ate contentedly.

Thompson Pass 25.5m. (2,722alt.) is the highest point on the highway in the Chugach Range. The stones here have been flattened down like a smooth pavement by the weight of an extinct glacier. The Chugach Mountains, lying between the Wrangell Mountains and the seacoast, are on an uplifted plain. This is apparent in the level skyline of the individual peaks and ranges.

At Thompson Pass in '07 stage passengers thrust their noses under fur robes and looked from the bleak and exposed summit to the jagged Sawtooth Mountains on the west, to Lowe River flowing thousands of feet below, and to the north where lay the Tsaina River Valley leading to the Interior. Blizzards are frequent here, and the stone relief cabin that still stands was covered with snow all winter long, so that a door was built in the roof, and travelers walked through the roof downstairs.

Crater Lake 28m. (2,360alt.) is a pool sculptured from the living rock filled with snow water from the snowfields above. Worthington

GLACIER 30m. (2,070alt.) lies about 500 yards from the road, and may be inspected at short range. The highway now drops rapidly through PTARMIGAN CREEK 31m. (2,050alt.), PTARMIGAN DROP 33m. (1,755alt.), a deserted roadhouse once crowded with travelers, to the TSAINA RIVER 37.8m. (1,550alt.). At DEVIL'S ELBOW 38m. (1,600alt.) the waters of the river surge through a cleft in the rock, apparently dropping into a subterranean channel, to reappear a short distance down the canyon. BEAVER DAM 42m. (1,305alt.), named after a beaver's dam still visible on the east, is a deserted roadhouse and telegraph station. After passing the BAD LANDS 46m., at STEWART CREEK 47m. (1,124alt.) the highway leaves Tsaina River and follows TIEKEL RIVER (Indian for "no fish"). TIEKEL ROADHOUSE 52m. (1,250alt.) is open for meals and lodging. TIEKEL TELEGRAPH STATION 57.5m. (1,440alt.) and ERNESTINE 62.7m. (1,480alt.) were important stations in the early days, now abandoned. In 1899 Abercrombie's expedition, under Lieutenant Babcock, reached Tiekell City shortly after a forest fire had destroyed the settlement. They found a public notice nailed to a tree trunk: Pop. before fire 39; Pop. after fire 5. Smith, Mayer. Lieutenant Babcock had surveyed a road route through Kimball pass and explored the Tonsina River in a canvas boat. He maintained friendly terms with the Indians, who called his soldiers "McKinley men." At 68m. is a mild SULPHUR SPRING. TONSINA LODGE* 80m. (1,500alt.) is open for meals and lodging. There is excellent trout fishing in the stream by the roadside, and bears are often seen near here. TONSINA RIVER 80.1m. is at the foot of a long hill to the tableland above. Part way up the hill are the remains of a deserted Indian village. LAKE PIPPIN 84m. (1,980alt.) is a landing place for pontoon planes and a nesting place for geese, ducks, and wild swan. From this point can be seen in clear weather the Wrangell Range, some of the principal points of which are Mt. Drum, Mt. Sanford, Mt. Wrangell, and Mt. Blackburn.

In an area of 5,500 square miles (100 miles by 70 miles) there are in the Wrangell Mountains at least 10 peaks of 10,000 feet above sea level. (Mt. Wrangell is an active volcano, named for Baron Wrangell, Russian governor of Alaska.) The Wrangell Mountains, unlike their neighbors to the south and north, are of volcanic origin, for the most part masses of lava and volcanic mud piled on an earlier surface of much diversity. The whole central mountain mass above 7,000 feet contains large snowfields. From these, glaciers drain in all directions down canyonlike valleys, molded by the glaciers themselves. The greatest glaciers flow to the north, and the largest, the Nebesna and Chisana ice streams, are 30 and 45 miles long, respectively.

Mt. Sanford (16,210 alt.), the highest unscaled peak in North America, was climbed for the first time by Bradford Washburn on July 21, 1938, with a small party. The ascent was planned carefully, based on a series of aerial photographs taken the year before. Descending, the climbers skied in one hour and twenty minutes the 6,000 feet between the summit and the last camp that had taken them seven and one-half hours to climb.

At 89m. is Willow Lake (1,430alt.). Willow Creek 92.4m. (1,380alt.) is the meeting point of the Chitina and Valdez sections of the Richardson Highway.

WILLOW CREEK TO CHITINA BY THE EDGERTON CUTOFF

The Edgerton Cutoff is 39 miles of highway between Willow Creek and Chitina. It was named for Maj. Glen C. Edgerton, formerly chief engineer of the Alaska Road Commission.

At 6m. is Pleasant Lake Fox Farm (1,280alt.), no longer in operation, and at 12m. is Kenny Lake (1,250alt.). Lower Tonsina Roadhouse 24m. (750alt.) is open for meals and lodging. Mountain goats are found on the range to the south. At 24.5m. is Tonsina River (750alt.), its name meaning "cottonwood." There is excellent grayling and trout fishing in the creek below Liberty Falls 29m. (1,300alt.).

An unusual view of the Wrangell Range is at 34.5m. Left to right are Mt. Drum (12,000alt.), Mt. Wrangell (14,000alt.), an active volcano occasionally wreathed with smoke, and Mt. Blackburn (16,140alt.). This range contains one of the most compact systems of Alaska glaciers and has been quite thoroughly explored and mapped. Mt. Blackburn was ascended by Dora Keen, an experienced Alpinist, in 1912. Miss Keen, herself only five feet high, had climbed many peaks of the Swiss Alps, but she was convinced that no Swiss guide would ever venture upon such a dangerous climb so lightheartedly as her sourdough companions. "No one uses ropes in Alaska mountain climbing," she remarked, "nor are ice axes known. When a man perishes in a crevasse, the glacier is named after him." In her first attempt she left the Copper River and Northwestern Railroad in August, 1911, four months after it had been constructed, at Mile 192, and traveled up the Kennicott Glacier to the foot of the mountain. Turned back at 8,700 feet by a blizzard, she made a successful attempt the following year with a party of six men, reaching the summit on May 19, 1912, after spending thirteen days in caves on the mountain during a severe storm. At 35.8m. is the northernmost of the three Chitina lakes (680alt.) followed by the road. LAKE CHENAN 38m. (650alt.) is the southernmost of the chain. Its clear waters are full of grayling, and the Native name is supposed to mean "thank you," in recognition of the fact!

CHITINA (p.o., 545alt., 116pop.,) is at 39m. The name is a compound Indian word: *chiti* (pronounced "chitty"), copper, and *na,* river. Most gazetteers give its pronunciation as *chit ee′ na,* but residents in the vicinity preserve the Indian pronunciation that sounds something like *chit′naw.*

A trapping and prospecting center, the town is surrounded on all sides by mountains, save for one gap on the southwest, through which can be seen forty miles distant SPIRIT MOUNTAIN (3,000alt.), thought by the Indians to be the home of a mighty spirit. There are two hotels, several general stores, and the modern conveniences of a much larger town. Near the Chitina Hotel may be seen the largest copper nugget (2,850 lbs.) ever found in Alaska. From the road to the south (a half-hour's walk) a clearer view of Spirit Mountain and Mt. Blackburn may be had. Another pleasant walk of about a mile northward along the railroad leads to Copper River bridge, where Copper River meets Chitina River, its largest tributary.

The Chitina or Copper River Indians were never subjugated by the Russians, as they could simply retire into the mountains when pursued after an attack. Abercrombie found them friendly in 1898, however, and estimated their number at about 300. They had never seen horses, and thought the English word "saddle" the same as "Seattle," the latter word having been made familiar to them by prospectors. They made tea by mixing a local leaf with English Breakfast, and their tobacco consisted of a piece of gunnysack rolled in wood ashes. In winter they lived in underground houses 8 by 10 feet. The Indian whose bench was on the right side of the fire as the stranger entered considered him as his guest, and offered him food and shelter, while his wife carefully looked the guest over to see if his mittens and moccasins needed repair. These Indians hammered copper nuggets into plates which they exchanged with the Tlingits. Each plate was worth several slaves, and the possessor of five or six plates was a rich man. Col. Alfred B. Iles, who explored the region for a copper syndicate in 1902, said that the local Indians were able to temper copper to the hardness of steel. Their tools were of copper; but copper tools were never used in hammering fishing stakes on the bank of the river, as this would make the river angry—stones from the bank were the proper thing. Throwing stones in the river would anger it, and the person doing so risked being drowned next time he attempted to cross its milky, glacial waters. The Indians of this vicinity are noted for their delicate beadwork on moccasins and their carving of the diamond willow; the contrast of the white outer wood with the red inner heart produces an unusual effect.

About 25 miles east of Chitina is STRELNA from which a wagon road leads to KUSKULANA and NUGGET CREEK.

CHITINA TO KENNICOTT BY THE COPPER RIVER AND NORTHWESTERN RAILROAD

Although the Copper River and Northwestern Railroad is discontinued, operation of a light tramway, or conversion of the roadbed into a highway, is not improbable. It is unlikely that a country of such great natural beauty and historic interest will remain inaccessible to tourists for any length of time.

MCCARTHY (p.o., 115pop.), sometimes called Shushanna Junction, is a mining village near Kennicott with hotels, stores, and an airplane landing field. From McCarthy a wagon road and trails lead into the heart of an important big-game country, abounding with mountain goats, bear, and moose. Mountain goats are especially abundant on a narrow strip of mountainous land not more than a mile wide at any place, completely surrounded by glaciers and the Wrangell Range, known as "the island." Trails lead north to CHISANA (13pop.) a mining camp on Bonanza Creek, thence west to SLANA, where they connect with the trail that leads from Gulkana on the Richardson Highway northeast to the Tanana country and the Yukon. MT. CHISANA has an altitude of 3,200 feet.

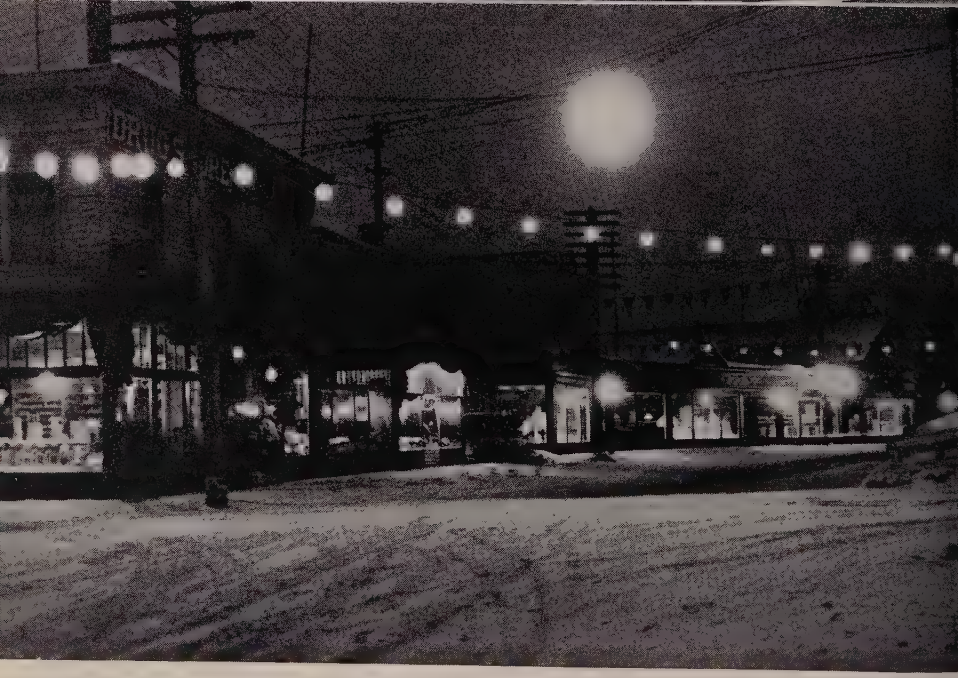
The Last Frontier

ALASKA, with an area one-fifth that of continental United States, has a population under sixty thousand, or about four hundred times as much space per person as the average American enjoys.

One-third of this population is concentrated in the Panhandle, or southeastern Alaska. There are ten incorporated towns in the district and many white villages and Indian settlements. Juneau, Ketchikan, Petersburg, Sitka, and Metlakatla are representative of this industrially developed area. Along Prince William Sound there are other incorporated towns (such as Cordova) similar in every way to those in the Panhandle. But a few miles north of Anchorage the railroad enters country which is typified by Girdwood and Curry.

Fairbanks is the chief city of interior Alaska and serves a vast gold-mining area. Here the population is continually shifting. New cities spring into existence overnight and once populous centers (such as Ruby and Olnes) fade to ghost towns. Along the Upper Yukon the population is chiefly Native, and stationary. Fort Yukon is the oldest English-speaking settlement along the river. Holy Cross is one of the oldest Roman Catholic missions to the Eskimo. Norton Sound and the Kuskokwim district have remained Native country, largely untraveled by the white man. "To the Westward," the Alaska Peninsula and the islands beyond, is fishing country, inaccessible by ordinary tourist travel. Unga, in the Shumagin Islands, is one of the cod-fishing villages along these waters.

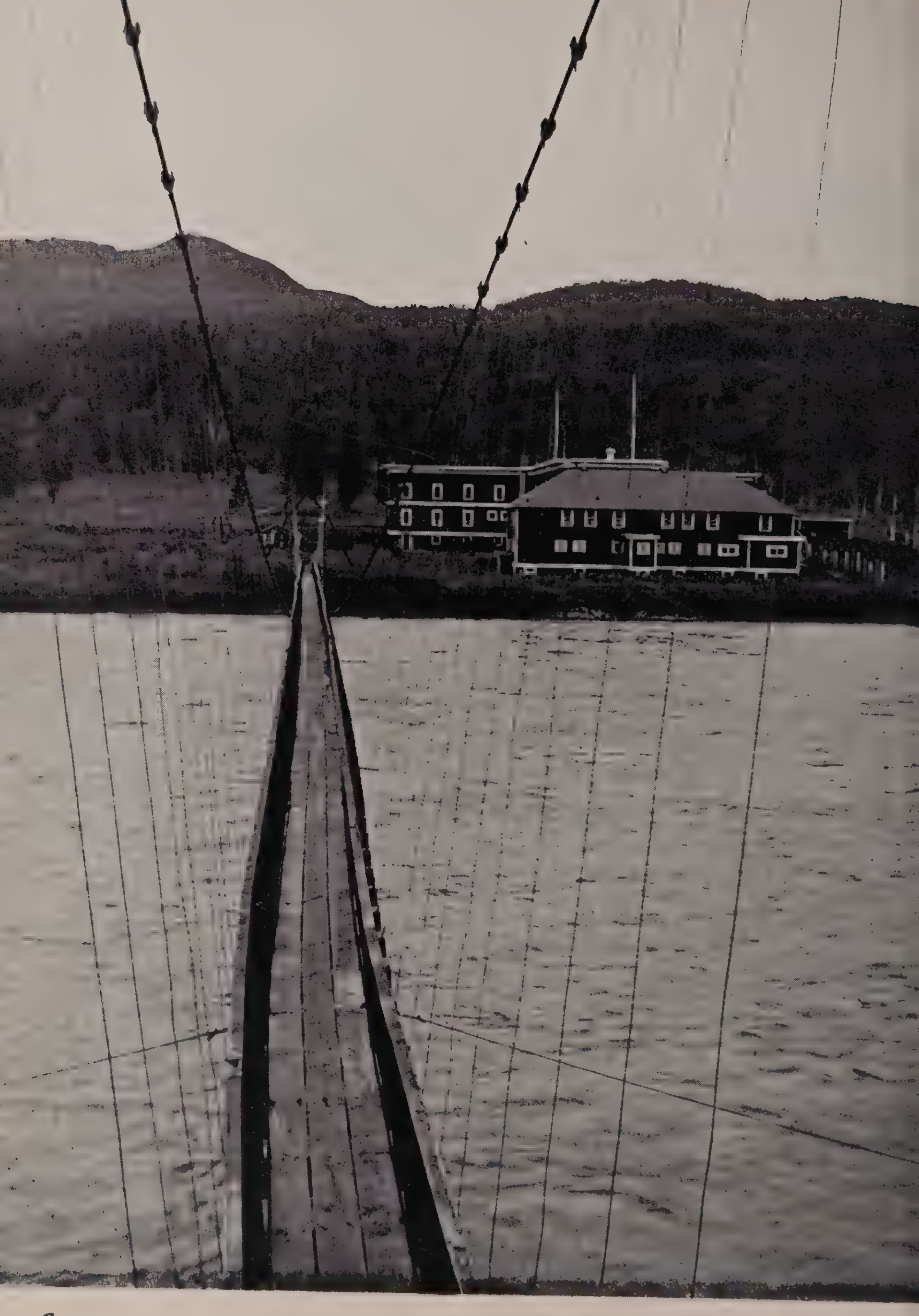
ABOVE: *Juneau*
BELOW: *Ketchikan*



ABOVE: *Aerial View of Fairbanks*
BELOW: *Winter Afternoon at Fairbanks*

MITKOF BEER PARLOR
LAUNDRY

Petersburg



Curry

ABOVE: *Sitka*
BELOW: *Cordova*

ABOVE: *Father Duncan's House, Metlakatla*
BELOW: *Olnes*

GIRDWOOD TRADING

ABOVE: *Wharf at Unga*
CENTER: *Holy Cross*
BELOW: *Iglu on Lower Kuskokwim*

ABOVE: *Girdwood*
CENTER: *Fort Yukon*
BELOW: *Fish Rack at Unalakleet*

Ruby

Kennicott (217pop. in 1930, now almost deserted) is the terminus of the Copper River and Northwestern Railroad. The town was named for Robert Kennicott, born in 1835, a pioneer in Alaskan exploration. Too delicate to attend school as a child, he was educated by his father. At the age of twenty he was commissioned by the Illinois Central Railroad to make a natural-history survey of southern Illinois. When only twenty-four he went to Alaska and explored the country for three years, reaching Fort Yukon. In 1865 he was put in charge of the Western Union Telegraph Company expedition. He died of heart trouble at Nulato in 1866. Kennicott was the headquarters of the famous Kennecott Copper Mine. Upon the left, approaching the railroad station, is a great glacial moraine that looks like the tailings of a gigantic dredge. On the sharp bluffs rising to the right of the station at an altitude of 2,200 feet is the mill, the power plant, the warehouse, offices, and homes. Over all is the aerial tramway from the mines.

The mines themselves were not only four miles distant, but 4,000 feet higher. There still remain more than forty miles of underground workings, connecting the Bonanza, Jumbo, Mother Lode, and Erie mines, through which the ore was trammed to the shafts and sent over the aerial tramway to the mill. The miners' wives and children remained at home while the miners slept in bunkhouses at the mines.

In 1898 Stephen Birch, a young mining engineer just out of Columbia, joined Abercrombie's expedition. In 1900 he bought out seven prospectors' holdings at an average price of $25,000 each, gambling that the copper would prove to be a vein and not merely a surface formation. He became one of the organizers of the Kennecott Copper Company, in which Guggenheim and Morgan interests became the principal shareholders. In 1906, at the age of thirty-six, Birch became president of the company. Within twelve years the mines paid several times the value of the original cost and construction.

Completing the Copper River and Northwestern Railroad, the Alaska Syndicate organized the Alaska Steamship Company, and thus controlled the transportation of the ore from mine to smelter. When the Jumbo mine was discovered it was found to surpass even the Bonanza in richness—it was practically pure chalcocite, in a vein measuring 180 by 80 feet.

The ore body occurs on the western slope of Bonanza Mountain, 5,000 feet above Kennicott Glacier and 7,000 feet above sea level. The story goes that two prospectors, Tarantula Jack Smith and Clarence Warner, halted for the night near this mountain. There was no grass anywhere, and it looked as if their horses would go hungry. Looking up the mountainside, on its western slope, vivid in the rays of the setting sun, they saw a patch of green. "Grass?" asked one of the prospectors, idly. Suddenly he leaped to his feet. "No! Malachite or chalcocite! Copper ore! A mountain of it!"

The outcrop was found to be nearly pure chalcocite, from 60 to 70 percent copper, with three or four dollars a ton in silver, and a little gold. A striking feature of this ore body was that the great masses of chalcocite which composed it appeared directly on the outcrop, covered, if at all, with a mere film of azurite; and these rich masses standing in pinnacles on the comb of the ridge, or showing as blotches on its steep western face, made one of the most remarkable surface showings of ore to be seen anywhere in the world, in the majestic setting of the castellated limestone cliffs above and the Kennicott Glacier thousands of feet below.

During the boom years a force of 600 miners was not uncommon, but in 1938 the mine was closed down upon the exhaustion of the ore.

WILLOW CREEK TO FAIRBANKS BY THE RICHARDSON HIGHWAY

(See page 242.)

North of Willow Creek the road passes through sparsely timbered tablelands. From COPPER RIVER 100m. (1,320alt.), is an unobstructed view of miles of the river itself, as well as the Chugach Range to the southwest and the Wrangell Range to the northeast. Mt. Drum is only 20 miles away. The glacier-fed Klutina River means, in the language of local Indians, "river with big head." At the junction of the Klutina and Copper rivers is COPPER CENTER* 103m. (p.o., 1,020alt., 100pop. est. 1938), the point where the old trail of '98 over the Valdez Glacier came out from the mountains. Settled in '96, Copper Center was the first white town in interior Alaska. It was an outfitting point for prospectors, and there are still standing a number of prospectors' cabins, rudely but comfortably constructed, in one case with the name of its owner carved in a door, windows glazed with bottles. The roadhouse, today open for meals and lodging, was always crowded in the early days of the trail. It cost fifteen thousand dollars to erect, boasted spring beds, and its modern baths were "one of the features of the establishment." In 1898 Copper Center consisted of "75 tents, some fine log cabins, a few caches, and a hotel and post office." Three hundred prospectors spent that winter here. Near Copper Center, on the lower leg of the Copper River, was Copper Ferry, where prospectors were ferried across the river to begin their trip northward to Eagle and the Fortymile country (see Part II, 2). COPPER CENTER NATIVE VILLAGE 104.5m. (1,025alt.) still has a number of Native inhabitants.

TAZLINA RIVER 111m. (1,010alt.) is a glacial stream, its name meaning, "swift waters." Here is a splendid view of the Wrangell Range. SIMPSONS 113m. (1,190alt.) is in the heart of the moose country. At 118m. the peaks of the Alaska Range begin to come into view in the north. Mt. Simpson is 5,200 feet high. The mountains of this range owe their relief to fractures of the earth's crust; the rocks to the north of the break are lifted high above those to the south. Erosion, acting upon the broken edge, has carved the separate crest as we now see it, leaving the areas of harder rock in high relief. There are remnants of an early ice sheet—flat-topped mushroom caps on spires above 5,000 feet.

GULKANA * 128m. (p.o., 1,385alt.) is an important trading post and a comfortable roadhouse on the Gulkana River. A large copper nugget makes a convenient bench by the doorway. Across the bridge is a Native village, and on the hill above the bridge a Native burial ground. ABERCROMBIE TRAIL 131m. (1,640alt.) is the name of a new road which leads through GAKONA (p.o.) and CHESTOCHENA centers to the vast mineralized area north of Wrangell Range. From Chestochena a summer road has been completed to Slate Creek, a distance of approximately 60 miles. The old Millard trail to Eagle and the Fortymile country also started north from 131m.

Before Capt. William R. Abercrombie laid out this trail in 1899, B. F. Millard of Chippewa Falls, Wisconsin, with the assistance of the Great Northern Party headed by H. T. Smith, made a trail to the Yukon, beginning at the Klowosinak River and running northeast past Mt. Drum and Mt. Sanford to the Tanana. The trail passed Big Rocky Run and Big Rocky River, a red, swift stream flowing from Mt. Drum. Beyond the Sanford River to the Slana River and Lake Mentasta, the country was flat and swampy; around Chestochena, Gakona and Tazlina rivers rushed through high banks of sand, gravel, and clay. Only the most daring prospectors managed to get over this trail. Failing to find gold, by August 15, 1898, most prospectors auctioned off their goods and hit the back trail to Valdez. Flour that had sold for $18 a hundred pounds went for $3; beans, for a cent and a half a pound; $15 blankets for $3; $16 rifles for $2.75; and many things had to be given away. Prospectors "going out" cheerfully called themselves "cold feet." Returning to Valdez, the prospectors found tents replaced by log cabins and frame buildings, and many of them, now entirely destitute, were fed by Captain Abercrombie's expedition.

Poplar Grove 140m. (1,805alt.) is the site of an abandoned roadhouse, from which may be seen the Gulkana River far below. Sourdough Roadhouse 150m. (1,870alt.) is open for meals and lodging. There is excellent grayling fishing here. From Hogans Hill 160m. (2,450alt.) are visible all four mountain ranges in this part of Alaska: the Alaska, Wrangell, Talkeetna, and Chugach. The mountain to the northwest of the abandoned Haggard Telegraph Station 165m. (2,370alt.) is Mt. Deborah (12,540alt.). Meiers Roadhouse 175m. (2,717alt.) is open for meals. In 1907 the proprietor of this roadhouse sold $1,300 worth of hay from this land in a single season. Paxson Lake 181m. (2,500alt.), 12 miles long, is famous for its lake trout, grayling, whitefish, and waterfowl. Here Dr. L. L. Hufman, who previously had won a trout-fishing contest conducted by the Tanana Valley Sportsmen's Association, catching a 26½ pound trout, bettered his own record by catching a 27-pounder near the Gulkana River, which enters the lake on the north and leaves it on the south. Bear may often be seen fishing here in June and July.

Paxson Lodge 191m. (2,697alt.) was the scene of much prospecting in 1905. It is still a favorite roadhouse for hunters, and its interior, recently enlarged and remodeled to lodge about 50 persons at one time, is hung with hunters' trophies. Here a trail branches east from the highway, skirting the southern side of the Alaska Range to Chisna, where it turns south to Dempsey and joins the Abercrombie Trail at Chestochena. A connecting road between Paxson and the entrance of Mt. McKinley National Park has been proposed. This road, involving the construction of about 155 miles of new highway, would extend from Paxson to Valdez Creek, thence to Cantwell, and so to the Park. Such a highway would serve not only tourists but miners, as it would traverse a rich mineral belt.

At 196m. is Fish Creek, full of trout and grayling. The highway follows the edge of Summit Lake to Gun Creek. West of the highway, near the proposed road to Mt. McKinley National Park, is DENALI (p.o., 52pop.). SUMMIT GLACIER 201.5m. (3,241alt.) is the dividing point between the Yukon and the Copper river watersheds. The water from Summit Glacier may end up either in the North Pacific Ocean (flowing down Gun Creek into Summit Lake and thence to the mouth of the Copper River) or in the Bering Sea (flowing into the Delta River, thence down the Tanana, and finally by way of the Yukon into the sea). ISABELLA PASS 203m. (3,310alt.) is the highest point on the Richardson Highway. Here the old winter trail took to the treacherous ice of DELTA RIVER 206.5m. (3,020alt.). At Yost's roadhouse, then an important stop on the bank of the Delta River, a big light hung nightly outside the door to guide the traveler.

At McCALLUM 208m. (2,920alt.), an abandoned telegraph station and roadhouse, a bell that saved the life of many travelers is still in place above the station. Along a line of stakes still remaining on the bars of the river was stretched a wire, one end of which was fastened to the bell. During the winter, when the roadhouse was sometimes completely covered by drifts, the gale blowing down the valley kept the bell ringing, thus guiding the exhausted traveler to shelter.

RAINBOW MOUNTAIN 212m. is so called from its numerous slides of delicate pastel shades. At 214m. a trail (15 minutes' climb, then 30 minutes' walk) leads east of the highway to the rim of GLORY HOLE (2,600alt.), a great basin in the bottom of which is a lake. This is a favorite spot for caribou, and in late August herds of them may be seen here. At DELTA RIVER CANYON 214m. to 233m., the highway crosses many turbulent glacier streams by bridge or ford. Several glaciers are close to the road.

RAPIDS ROADHOUSE 233m. (2,130alt.), at the mouth of the canyon, is in the heart of a big-game country. The varicolored mountains are full of mountain sheep and brown bear, and the hills and valleys are feeding grounds for caribou. Moose are common in the open, park-like stands of small spruce and poplar at the foot of the mountains.

Col. H. E. Revell, who with his family operates Rapids Roadhouse, discovered one morning in December, 1936, that the glacier which ordinarily was visible only on a clear day and then as a narrow, white line in the far distance, now stretched across the floor of the little valley like a bulwark. Whether this change had been taking place so slowly as to be almost imperceptible or whether the glacier had started on a tobogganlike slide, the Revells were unable to decide. But the fact remained that the glacier had moved not only feet but miles, was still moving, and showed no intention of stopping. In February, Otto William Geist made a trip by airplane with Jack Herman to photograph the face of the glacier and make a preliminary study of its advance.

"Early in April," wrote Geist, "four of us, outfitted with survey instruments as well as barometers, cameras, thermometers, bedding, food, and a tent, were landed by plane on the glare ice of the river two miles above the face of the glacier. The next day Harry Revell brought our equipment to the foot of the glacier with his dogs, and we pitched our tent less than 300 feet from the face of the glacier. The vast river of ice that stretched for a mile and a half across the valley, twenty-five miles or more back, and 400 to 500 feet high, seemed to be a living, sinister mass. It rumbled and crashed and shook the earth until we could easily imagine we were in front-line trenches. Even the dogs barked at it.

"The purpose of our trip was to map the region into which the glacier might advance, to measure accurately the rate of flow and to photograph systematically the glacier and its surroundings. The advance of the ice was easily measured. At regular intervals, lines of stakes were set perpendicular to the moving face, and daily the distance between the stakes and the edge of the ice was measured with steel tapes. While we were there, the glacier's advance was a little over 25 feet per day. Since it began to move nearly a year ago, it has covered a distance of approximately four miles. Undoubtedly, there are many flowing glaciers on the earth's surface but it is very seldom that such an active mass is so close to civilization, to be studied and recorded.

"The moraine and other glacial deposits in the Big Delta district bear out the stories of Natives, handed down to them, of days when the Black Rapids glacier was on the opposite side of the river, miles from its last year's location. So surely this is not the first journey taken by this restless mass of ice. The cause of such a glacial movement is the enormous accumulation of ice and snow in the catchment basin. When this load becomes heavy enough and is excited by an earthquake or other unusual disturbance, the entire mass automatically begins to move. The pressure of billions of tons of ice and snow somehow must be released, and so the inexorable march begins. In the last few months, the movement of the glacier has slowed down to less than 19 feet per day, and indications point toward the probability that its chief force has been spent and it can not cover the several hundred feet to the river before spring.

"If all of Alaska's glaciers had the itinerant characteristics of the Black Rapids glacier certain sections of the Territory wouldn't be a very safe place for human habitation, but fortunately most of them are content with slow recession or occasional sluffing and cause no worry to near-by residents."

The roadhouse is the relay station for telephone conversations, as through conversations are impossible between Valdez and Fairbanks. There are two telephones on the wall. The proprietress places a receiver at each ear and talks alternately into the Valdez and Fairbanks phones. The fact that she is the repository of the intimate secrets of much of interior Alaska has not spoiled her light touch at the cookstove.

DONNELLY 243m. (1,770alt.), an abandoned telegraph station, is in the heart of a big-game country. The highway passes over a shoulder of isolated PILLSBURY DOME 253m. (2,875alt.), at an altitude of 2,350 feet, where Mt. Hayes (13,940alt.) and Mt. Deborah (12,540alt.) are clearly visible to the southeast. Northward is the vast Tanana Valley. It is about an hour's climb to the top of the Dome, where there is an excellent view of this whole section. The highway passes BEALE'S CACHE 262m. (1,600alt.), now abandoned—the center of a big-game country—and crosses JARVIS CREEK 269.5m. (1,200alt.). MCCARTY * 280m. (1,000alt.), also known as GRUNDLER, BIG DELTA (p.o.) and TANANA FERRY, is a trading post and an important supply point for the upper Tanana Valley. The Tanana River ("river of the mountain men") is navigable in summer by small steamer to Fairbanks. There is an excellent roadhouse at McCarty, and the ferry transports the stage to the north bank of the river, using the current of the river for propulsion by a method at least 5,000 years old.

TANACROSS (p.o., 80pop.) is on the Tanana River about 100 miles above Big Delta. Above Tanacross is TETLIN (p.o.), a Native village.

The Office of Indian Affairs maintains a school and a dispensary at each settlement and an area surrounding Tetlin has been set aside for trapping exclusively by Natives.

If the traveler suddenly catches sight of an American bison looking as if he had escaped from a nickel, let him not be alarmed. Few people outside the immediate vicinity of Fairbanks realize that in Alaska wild buffalo roam—not buffalo in a corral behind a fence, but real wild buffalo in the wilderness. This is not so strange as one might think, for a short time ago, as geological history goes, buffalo in uncounted millions roamed what were then the upland plains of a higher and drier Alaska. Their bones are now found in profusion in the graves and mud banks of gold-bearing creeks. Because of climatic changes, these vast herds became extinct and Alaska remained, until 1926, without what must have been at one time its most characteristic animal. In that year a group of Fairbanks citizens formed the Alaska-Yukon Game Protective and Propagation Association. At the first meeting of the association it was decided to ask the Alaska legislature to appropriate money for the introduction of deer, elk, and buffalo into the interior of Alaska, as the members believed that in the constant cycle of climatic change, the time had now come when these animals would thrive once more. In 1927 the Alaska legislature, through the efforts of Representative Fred Johnston, voted an appropriation for the introduction of all three of these animals. But because of opposition from officials elsewhere, the buffalo were the only animals obtained.

Twenty-three head were crated at the National Bison Range at Boise, Montana, and landed at Fairbanks on the fourth of June. A public meeting was held and all the truck owners in town volunteered to take the crated animals out to their place of liberation on the Big Delta River, just north of the Alaska Range. E. B. Collins, with a party of volunteer helpers from the association, had left the day before and constructed a releasing corral. One bull and three cows were taken to the Alaska College to be held over the winter for observation and as an insurance against the entire herd's being wiped out, if the animals could not survive on the range selected. These animals were subsequently released the following spring.

The remaining nineteen were hauled by trucks to the Big Delta and, after much trouble and some exciting scenes during which the nearest trees became very handy, were liberated in the corral. The backing of the huge animals out of their crates seemed to have been the greatest problem confronting the best brains of the expedition. "Back up" didn't seem to be a word ever taught in the buffalo vocabulary, though they kicked back with great enthusiasm when Mr. Collins tried to drag them backwards by the tail. The problem was solved by tipping the crates up at such a steep angle that the animals slid out by themselves.

Of the buffalo taken out to the college, one cow was lost by accident the first week she was there. Another cow's hip was so badly damaged while on board ship that she had to be shot at the corrals. The following winter another cow was lost by accident in the ice of Jarvis Creek.

This left twenty animals to start Alaska's buffalo herd. Since the first year, the increase has been phenomenal. No one really knows how many animals there actually are, although one count gives the number as over one hundred. Because of the favorable climatic conditions and the abundant feed, the animals are much larger than the original stock in Montana. Great bulls wander through the plains and rolling hills of the Big Delta country, their long manes and beards almost sweeping the ground. Buffalo cows and calves are a common sight in spring and fall to motorists crossing this country on the Richardson Highway.

The hope of the association, now known as the Fairbanks Sportsmen's Association, is that the elk, which once lived in this country at the same time as the buffalo, will also resume its place as one of the common game animals.

These Alaska buffalo are owned by the government, under the control of the game commission. They are protected by law for an indefinite period of years. When they become numerous enough, possibly by 1945, permission may then be extended, as is now done in some States, for hunters to kill a limited number annually.

The highway climbs a steep rocky bluff after passing SHAW CREEK 202m. (920alt.), where there is excellent fishing. At TENDERFOOT CREEK 296m. (950alt.), placer gold was discovered in 1907, and in the next year produced over a million dollars. At 297m. is "million dollar mile," where the road is surfaced with tailings from the mines. RICHARDSON (p.o., 800alt., 4pop. 1938) is at 301m. The postmaster says, "You would be surprised at the amount of time I spend answering letters addressed to the Chamber of Commerce." The town was named in honor of Gen. Wilds P. Richardson, and has twice been almost destroyed by washouts. Banner, Democrat, and Redman creeks, all near here, contain placer gold deposits, and some of them are being reworked. Richardson Roadhouse 302m. (875alt.) is not open. Gasoline Creek 303m. (860alt.) was so named, because, in the early days of the road, cars from Fairbanks had to refill their tanks here. The better surfaced road no longer makes this necessary. Birch Lake 312m. (810alt.) is a resort for citizens of Fairbanks—there is excellent swimming in the birch-bordered lake. At Fox Farm * 320m. (720alt.), silver, blue, white, and red fox and mink are bred and raised, as well as rabbits that when skinned will be glorified into "chinchilla." Good meals are served here. Lake Harding 325.5m. (700alt.), named after President Harding, is about a mile from the highway. It is a playground for people living in Fairbanks, with fishing, hunting, swimming, and boating. There are gold prospects here. Many grayling are found in the clear water of Salcha River 331m. (640alt.), and near by is a small Indian village. Salchasket Telegraph Station 338m. (610alt.) is now used to house a road-maintenance crew. Its Indian name was pronounced "Salt Jacket," by prospectors. At Piledriver Slough 343m. (600alt.), the road, passing through the flats of the Tanana, crosses one of the many meandering channels of the river. Bergman's 18-Mile Roadhouse * 353m. (500alt.), 18 m. from Fairbanks, is one of the few roadhouses in Alaska like those in the States: a place where one may dine and dance. At Ninemile 362m. (475alt.), farms begin to appear.

(For FAIRBANKS 371m., see Part II, 6.)

5. BY RAIL TO THE INTERIOR

Columbia Glacier—Seward—Anchorage—Matanuska—Curry—Mt. McKinley National Park—Nenana.

VALDEZ TO SEWARD BY OCEAN STEAMER

LEAVING VALDEZ, the steamer passes magnificent Columbia Glacier, lying at the head of Columbia Bay five miles from the entrance. It was observed by Whidbey in 1794, and described in Vancouver's journal as "a solid body of compact elevated ice." Its movement must have been no less spectacular than at the present day, for as Whidbey's party passed the eastern bay "they again heard the thunderlike noise and found that it had been produced by the falling of the large pieces of ice that appeared to have been very recently separated from the mass extending in vast abundance across the passage." Capt. A. O. Johansen visited the glacier in 1898 in his steamship *Dora* and made a sounding of fifty fathoms near its face. The Harriman Expedition explored and named the glacier the following year, and Dr. G. K. Gilbert made the first scientific description of the ice tongue. During the twentieth century it has been surveyed and described many times by expeditions of the United States Geological Survey and the National Geographic Society.

This grandfather of glaciers in Prince William Sound has its source on the southern slopes of the Chugach Mountains and rises near the base of Florence Peak (11,190 alt.), which Ralph Stockman Tarr named in 1910 for his wife. Its lower part varies in width from three to four miles, and its lower valley walls rise from 2,500 to 3,200 feet. It terminates at the sea in a superb ice cliff slightly over 2½ miles wide, "a beautiful pinnacled and crevassed, snowy white, sinuous precipice of ice, rising vertically between 100 and 200 feet above the water, and in a less precipitous cascade to 500 feet." Ice pinnacles the size and thickness of Bunker Hill monument have been known to break off and plunge into the water, causing waves twenty feet high. Bergs are continually breaking off from the face of the glacier as it moves at the rate of from one to two feet a day. East of the main ice cliff the glacier terminates on an islet connected with Heather Island at low tide. Although the glacier is so vast that the whole city of Washington, D.C. has been drawn to scale on a map of a portion of its terminal surface with room to spare, it is much less extensive than formerly. Only a few thousand years ago Columbia Glacier was a small tributary of the great glacier that filled Prince William Sound, rearing some 4,000 feet in the air and completely covering the top of Heather Island.

North of the glacier is Mt. Witherspoon (12,030 alt.), in the Chugach Mountains, named after D. C. Witherspoon (1891-1921), a topographer for the Geological Survey. To the northwest is Mt. St. Agnes (13,250 alt.). Under the leadership of Bradford Washburn, Harvard instructor in geographical exploration, four young explorers succeeded in climbing Mt. St. Agnes on June 19, 1938, reaching the summit after a 24-day battle against storms and frigid weather.

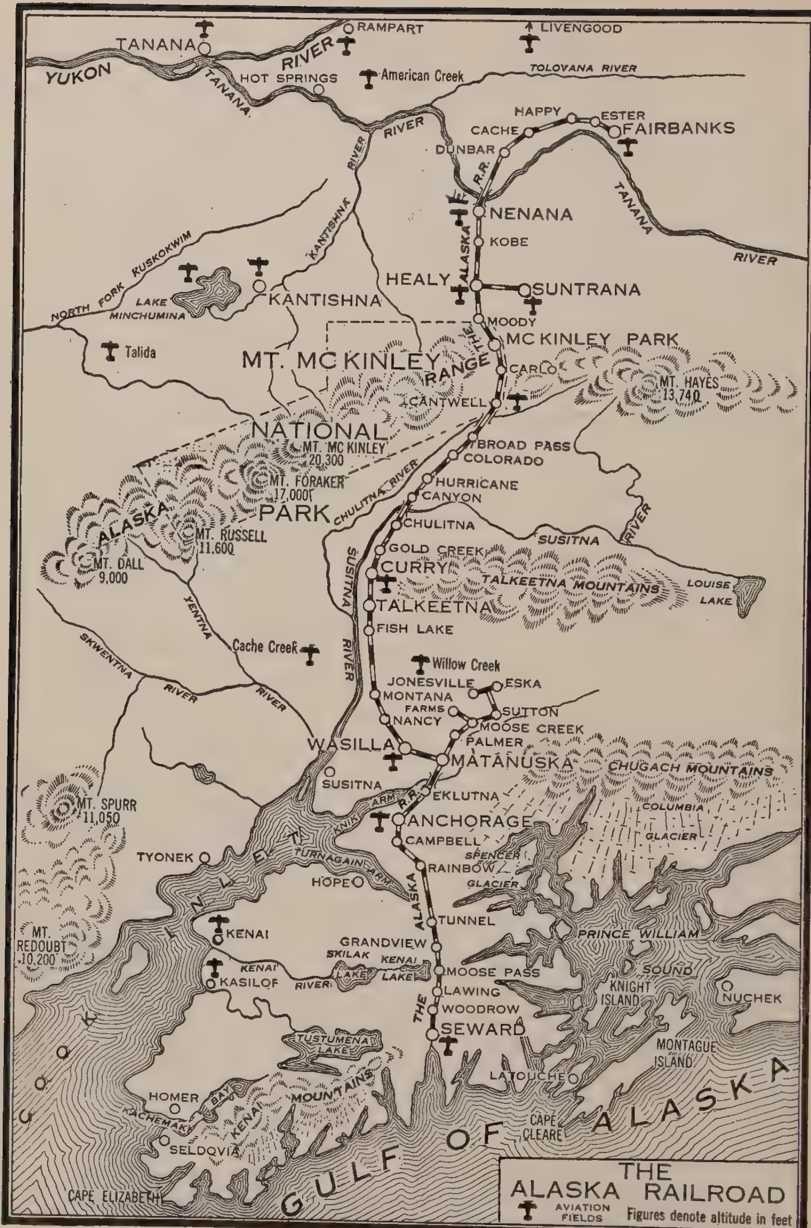
The Columbia Glacier area is a gold-mining district served by ski-planes taking off from the Valdez mud flats. In 1937 the Ruff and Tuff mine struck a four-foot channel estimated to run more than fifty dollars to the ton.

Contrary to popular impression, the use of the plane by prospectors has not softened the breed. An episode in the life of one of them is a case in point. Sam Gamblin fell heir in 1936 to a rich claim on Columbia Glacier (reputedly running seventy-five dollars to the ton), the property of a miner named McDonald, who had lived alone at his mine, coming into Valdez once a month for supplies which he paid for in free gold. After 1931 McDonald disappeared for good, presumably in a glacier crevasse. Gamblin flew to the claim with a tent and the necessary supplies, and was put down on an ice-covered lake beyond Columbia Glacier on April 3rd. A storm came up, and Gamblin dug a ten-foot tunnel into a snow drift, heating this shelter with a two-burner gasoline stove. The storm blew for thirteen days. When not shoveling snow from the mouth of his tunnel, Gamblin sat in his sleeping bag and read over and over magazines he had brought with him. When the storm had passed, it was spring, and he set up his tent and anchored it with a five-gallon can of gasoline. Two weeks later came another storm, and Gamblin spent a night holding the ridgepole to prevent everything being blown away. The plane arrived on schedule to take him back, but was equipped with wheels and could not land. The pilot dropped supplies and a note telling Gamblin to meet him at Sawmill Bay in a week. This rendezvous was across the glacier and down the opposite side of a mountain. Gamblin arrived on time, but the plane was six days late. With no supplies, Gamblin had to live on mussels—he ate four lard-pails a day and still lost weight. At length he arrived at Juneau and legally recorded the claim. As for the original owner of the claim, McDonald's body may emerge at the face of the glacier any time during the next thousand years.

Leaving Prince William Sound, the steamer passes a number of islands, the largest of which, MONTAGUE ISLAND, at the entrance, is about 42 miles long.

About 70 miles east of Seward, on the northwest shore of Latouche Island, is LATOUCHE (p.o., 339 pop.), a trading center for near-by canneries and fox farms. The island was so named by Vancouver in 1794, although Portlock in 1787 had called it Foot Island from its fancied resemblance to a human foot. The Office of Indian Affairs maintains a school at CHANENGA (90 pop.), an island north of Latouche.

RESURRECTION BAY, on the south side of Kenai Peninsula, was selected by Baranof as the site of a shipbuilding yard, and here was launched the first ship constructed on the western shores of America, the *Phoenix,* in 1794. The principal entrance to Resurrection Bay is Harding Gateway, a passage five miles wide between Rugged and


TANANA
RAMPART
LIVENGOOD
YUKON
RIVER
TANANA
HOT SPRINGS
American Creek
TOLOVANA RIVER
RIVER
HAPPY
ESTER
CACHE
FAIRBANKS
DUNBAR
R.R.
NENANA
TANANA
KOBE
ALASKA
RIVER
KANTISHNA
NORTH FORK KUSKOKWIM
LAKE MINCHUMINA
KANTISHNA
HEALY
SUNTRANA
MOODY
THE
Talida
MC KINLEY PARK
MT. MC KINLEY
RANGE
CARLO
MT. HAYES 13,740
CANTWELL
NATIONAL
MT. MC KINLEY 20,300
BROAD PASS
COLORADO
MT. FORAKER 17,000
CHULITNA RIVER
HURRICANE
CANYON
ALASKA
PARK
CHULITNA
MT. RUSSELL 11,600
SUSITNA
RIVER
MT. DALL 9,000
GOLD CREEK
CURRY
TALKEETNA MOUNTAINS
LOUISE LAKE
SUSITNA
TALKEETNA
YENTNA
FISH LAKE
SKWENTNA
Cache Creek
RIVER
Willow Creek
JONESVILLE
ESKA
RIVER
RIVER
MONTANA
FARMS
SUTTON
NANCY
MOOSE CREEK
WASILLA
PALMER
MATANUSKA
CHUGACH MOUNTAINS
SUSITNA
EKLUTNA
COLUMBIA
MT. SPURR 11,050
KNIK ARM
R.R.
ANCHORAGE
GLACIER
CAMPBELL
TYONEK
INLET
TURNAGAIN ARM
SPENCER
RAINBOW
GLACIER
HOPE
ALASKA
TUNNEL
KENAI
PRINCE WILLIAM
MT. REDOUBT 10,200
GRANDVIEW
SKILAK LAKE
KENAI LAKE
SOUND
KENAI RIVER
MOOSE PASS
KNIGHT ISLAND
NUCHEK
KASILOF
LAWING
COOK
WOODROW
THE
SEWARD
TUSTUMENA LAKE
MONTAGUE ISLAND
LATOUCHE
HOMER
BAY
MOUNTAINS
KACHEMAK
KENAI
CAPE CLEARE
SELDOVIA
GULF OF ALASKA
CAPE ELIZABETH
THE ALASKA RAILROAD
AVIATION FIELDS
Figures denote altitude in feet

Cheval islands named after Warren Gamaliel Harding, first United States President to visit Alaska during his term of office.

At the north end of Resurrection Bay, completely surrounded by mountains from 3,000 to 7,000 feet high, is the incorporated town of SEWARD (p.o., 835 pop.), named after William H. Seward, who as secretary of state negotiated for the purchase of Alaska. It is the terminus of the Alaska Railroad and a gateway to the Interior, besides serving as a distributing center for western Alaska and as the outfitting point for big-game hunters on Kenai Peninsula and Kodiak Island. Its chief industries are transportation and lumbering, and near by is a large though undeveloped farming district. It contains some half dozen hotels, as many cafés and restaurants, a number of churches and clubs, Federal governmental agencies, the Seward General Hospital, and modern conveniences usually found only in much larger towns in continental United States.

In 1938 merchandise valued at over $9,000,000 passed through the port. A harbor of refuge was authorized in 1930 and 1935, providing for breakwaters and a dredged basin 12½ feet deep, at a cost of $173,000. The port is open all year, and even float ice is rare. In addition to being served by regular passenger steamers from Seattle, the port is the terminus of passenger and freight boats to the Aleutian Islands and southwestern Alaska (see Part II, 7, 8).

The climate is mild, because of the proximity of the Japan current. The average winter temperature ranges around 7° below freezing (25° F.), the summer temperature, from 50° to 60° during the day.

In the late eighteenth century Russian officers christened the bay Resurrection, or Sunday Bay, and established a shipyard there. After their removal to St. Paul on Kodiak Island they kept the bay as headquarters for trips into the Interior. The first American settler in the vicinity was Frank Lowell, a trader who moved from Kodiak in 1884. The steamer *Dora* entered the bay in 1896, on her run from Sitka to Dutch Harbor.

In June, 1902, a surveying party landed at the site of what is now Seward and began to lay out a route for the projected Alaska Central Railroad, to furnish a means of entering the Interior and to tap the Matanuska coal fields. In July of the following year the townsite was surveyed and named, a wharf constructed, and streets laid out geometrically, the avenues numbered from one to seven, the streets named

Monroe, Madison, Jefferson, Adams, and Washington. After 71 miles of the railroad line had been built, all coal lands in Alaska were withdrawn from entry in 1908. The Alaska Northern Railroad, successor to the Alaska Central, suspended construction in 1909. The reaction of the townspeople was later immortalized by Pat O'Cotter a local poet:

You squandered untold millions
On the lousy Philippines,
But you always made Alaskans
Go and rustle for their beans . . .
You've never treated us quite right,
You grabbed away our coal,
And reserved all our firewood,
And what we've used we stole.
You soaked us on our cable tolls,
But we don't give a damn—
Even at twenty-eight cents per word
We're with you, Uncle Sam.

Late on a Saturday afternoon in August, 1915, a cable message arrived with the news that Seward had been chosen as the terminus of the Alaska Railroad. The *Seward Gateway* was on the streets with an extra in half an hour, and real-estate prices mounted by the minute. Lots changed hands overnight, property quadrupled in price, new stores opened, established merchants enlarged their quarters. Incoming steamers were crowded with passengers seeking work, as a new kind of stampede for Alaska began. The Alaska Railroad was completed in 1923. Since then Seward has been, in the phrase of Rockwell Kent, "a tradesmen's town where tradesmen's views prevail. . . . The worst of Seward is itself; the best is the strong men that by chance are there or that pass through from the great Alaska."

A golf course has been laid out along the edge of the airplane landing field. An excellent motor road leads to Kenai Lake, 20 miles distant. Kenai Peninsula itself is about the size of the state of Maryland, is rich in coal, gold, and agricultural lands, and contains game, especially mountain sheep and goats, large moose, and three kinds of bear. The *Seward Gateway,* a tri-weekly, and the *Seward Weekly Gateway* are published in Seward.

Near Seward, on Resurrection Bay, is Fox (RENARD) ISLAND, where Rockwell Kent lived for some time with his son. Its harbor was described in his book *Wilderness, A Journal of Quiet Adventure in Alaska,* in words that convey the feeling of many Alaska landscapes: "Twin lofty mountain masses flanked the entrance and from the back of these the land dipped downwards like a hammock swung between them, its lowest point behind the center of the crescent. A clean and smooth, dark-pebbled beach went all around the bay, the tide line marked with driftwood, gleaming, bleached bones of trees, fantastic roots, and worn shredded trunks. Above the beach a band of brilliant green and then the deep, black spaces for the forest. So huge was the scale of all this that for some time we looked in vain for any habitation, at last incredulously seeing what we had taken to be boulders assume the form of cabins." Here, in a cabin belonging to Olson, "an old man, a Swede, bald of head, sensitive of chin, and with good-humored eyes," Rockwell Kent and his son lived from August, 1918, to March, 1919, swimming, fishing, writing, drawing, listening to Alaska tales told by Olson, daily lying naked out-of-doors in a snowdrift under the winter sun.

SEWARD TO FAIRBANKS BY THE ALASKA RAILROAD

Trains leave Seward on steamer days early in the morning and arrive at Fairbanks late in the afternoon on the following day. All through trains make a luncheon stop at Anchorage, allowing sufficient opportunity to see the town, an overnight stop at Curry, and a luncheon stop the following day at Healy, except the special train (motor car) from Anchorage to Fairbanks. To figure railroad fare, multiply the mileage by $0.06 and bring to nearest 0 or 5. To figure parlorcar fare, multiply the mileage by $0.007 and bring to nearest 0 or 5. Special round-trip fares of one fare and a third are in effect during summer months.

Under certain conditions passengers may make a railroad side trip to Palmer in Matanuska Valley at Anchorage, and a stopover in Mt. McKinley National Park at McKinley Park (see "Tours for Round-Trippers").

At Nenana connections are made with steamers to points up- and downstream on the Yukon River (see "Tours for Round-Trippers").

The railroad is operated the year round.

Connecting Pacific tidewater at Seward with Interior Alaska at Fairbanks, 470.5 miles distant, the Alaska Railroad, owned and operated by the United States under the Department of the Interior, is a main artery of travel and heavy traffic, serving gold mines, coal fields, the Matanuska Valley farming area, and the prosperous towns of Anchorage and Fairbanks. It is the only route to Mt. McKinley National Park. During the peak of the summer season over a thousand persons are employed in the various activities of the line, and over three hundred are on the winter payroll. The annual payroll amounts to more than a million and a half dollars.

In 1912 Congress authorized an investigation of transportation problems in Alaska, and a report was submitted the following year. A second commission was appointed in 1914, which made an examination and survey of several routes. The route finally chosen extended from Seward north to Nenana, with a branch line to the Matanuska coal fields. Subsequently it was decided to extend the main line to Fairbanks. Supply bases were established at Seward, Anchorage, and Nenana, and construction was immediately started, continuing until a golden spike was driven by President Harding at North Nenana on July 15, 1923. In that year the Alaska Engineering Commission, which had had the services of such men as Alfred H. Brooks, geologist, Colin M. Ingersoll, consulting railroad engineer, William C. Edes of the Southern Pacific Railroad, Col. Frederick Mears of the U.S. Army, and Thomas Riggs, Jr., formerly of the Alaska Boundary Survey Commission and later governor of Alaska, was dissolved, and Lee H. Landis became the first general manager of the railroad. In 1928 Col. Otto F. Ohlson was appointed manager. Up to June 30, 1937, the government had expended on the railroad about $73,500,000; the sum included the construction of telegraph and telephone lines, wharves, hospitals, townsites and dwellings for employees, and the operating expenses in excess of revenue. Deficits during the early years of operation have been so reduced that in 1937 the net operating profit was $9,971 (eliminating operating costs of ocean-going vessels), of which the railroad expended $7,449 for an investigation of mineral resources affecting railroad tonnage.

The total length of the line is 550.9 miles, of which 470.55 miles are main line, 31.35 branch lines, 2.17 industrial tracks, and 46.83 yard-tracks and sidings.

The JESSIE LEE HOME 2m. is a mission for Native children. At 3m. the railroad crosses Resurrection River and at 6m. Salmon River. DIVIDE 12m. (694alt.) is the summit of the first crossing of the Kenai Mountains. Here water flows on one side into Resurrection Bay on the south, and on the other into Lake Kenai on the north. Snow River is crossed at 14.5m. At Primrose 18.4m. (457alt.) is the lower tip of Lake Kenai. At 20m. the road crosses Vichery Creek. Lakeview is a post office between Primrose and Lawing.

Lawing 23.3m. (452alt.), on Lake Kenai, is headquarters for the forest ranger of the Chugach National Forest and a famous center for game fishing. The lodge contains a fine collection of pelts and mounted specimens of game, and is equipped to accommodate visitors. From it a launch leaves for Russian River, famous for the number and size of its rainbow trout, the largest recorded measuring thirty-three inches. Near by are hiking trails and good fishing streams. A short distance north of Lawing is Ptarmigan Creek, with excellent trout.

On the right side of the track at Lower Trail Lake 25.7m. is a tramway and a road leading up the mountainside to a gold quartz mine.

At Moose Pass 29.3m. (p.o., 83pop., 486alt.) the railroad crosses Middle Trail Lake and follows the shore of Upper Trail Lake. Moose are hunted throughout this area. Sometimes in winter an animal gets caught in the ravines formed by the snow plows and runs ahead of the locomotive for miles. At Moose Pass, a mining center, is a roadhouse and a Territorial school. Pontoon planes may land on the near-by lakes during the summer. Russian River Rendezvous is a roadhouse reached from Moose Pass, built on the site of a Russian exile colony. It is a headquarters for sport fishing and maintains cabins for big-game hunting.

From Moose Pass a road leads to the Sunrise and Hope gold-mining districts on the south side of Turnagain Arm. In the summer of 1895 prospectors found rich diggings on Cook Inlet. News of the strike spread to Seattle and San Francisco, and in the spring of 1896 a gold rush began. Many of the prospectors had only enough money to pay their fare, as they believed that in a few days they would pick up all the nuggets they could carry. The steamer *Lakmé* brought 250 passengers, the *Utopia* 100, and sailing craft brought many more. Sunrise and Hope (p.o., 48pop. est. 1938) quickly sprang into existence. After a brief attempt to stake claims, most of the 2,500 gold rushers sold their outfits at bargain prices and took passage home. A few claims staked by experienced prospectors produced fair results the first season. By November there were left at Hope about 80 settlers, and at Sunrise about 150. A party of three men attempted to cross over to Prince William Sound early in the spring of 1897 to put mail aboard the steamer *Dora* on her first trip Outside. A blizzard caught the party, two disappeared, and the third, named Blackstone, was found frozen to death with his dog on what is now Blackstone Bay. Another party, led by L. L. Bales, an experienced guide, safely arrived at the Yukon River overland from Portage Bay. Among the gold seekers wandering over the Interior was W. A. Dickey, who penetrated far up the Susitna River in 1896 and returned to Sunrise with a wonderful tale of an immensely high and magnificently rugged mountain. Old-timers refused to believe him, so he returned the following year and named the peak Mt. McKinley, after the president, news of whose election had just arrived in Cook Inlet. When the Klondike strike was made, the rush at Cook Inlet was forgotten in the excitement of 1898. Today the population of the district is sparse and scattered.

At 33m. the road begins to follow Trail Creek, along which are many beaver dams and lakes created by the dams. At 44m. is a splendid view of Trail Glacier, Trail Creek, and Trail Canyon. GRANDVIEW 44.9m. (1,063alt.) is the summit of the second crossing of the Kenai Mountains. A beaver dam and house are on the right side of the track at 46m. Over a bridge 104 feet high the railroad crosses the west fork of Placer River at 47.8m. Here, for over three miles, runs the famous ALASKA RAILROAD LOOP, consisting of two spirals, one of which is a complete circle, on which the track runs along the mountain sides, over high bridges, trestles, and through tunnels and snowsheds, forming a complete loop over Placer River. The winding track is visible at one point in four places, and here a short stop is made to observe it. At 49m. is BARTLETT GLACIER, and to the left and above, DEADMAN'S GLACIER. At 51m. the train dives through a tunnel, and at 51.8m. the Placer River is crossed for the sixth time on a bridge 78 feet high. During the next one and one-half miles the railroad passes through six tunnels in following Placer River Canyon. The open timber structures built over the track are snowsheds to prevent winter snow slides from covering the roadbed. SPENCER GLACIER at 52.7m. ends within 300 yards of the track.

PORTAGE 64m. (33alt.) is the head of Turnagain Arm of Cook Inlet. Here the tide is second only to that in the Bay of Fundy. In

1778 Captain Cook entered Cook Inlet in search of the northwest passage. Forced to return at the head of the inlet, he named it Turnagain River. Vancouver explored the inlet in 1794, established the "river" as an arm of the sea, and named the inlet after Cook, who had modestly left a blank space for the name. From Portage, PORTAGE GLACIER is visible. Prince William Sound is only 12 miles distant from this point.

For most of the rest of the way to Anchorage the railroad follows the shore of Turnagain Arm. At 64.7m. is Twentymile River, with TWENTYMILE GLACIER in the distance, and at 70m. Kern Creek. GIRDWOOD 74.8m. (p.o., 40alt., 30pop. est. 1938) is an old construction and mining settlement and the starting point for the Crow Creek gold district. Bird Creek is at 86.6m. From RAINBOW 93.5m. (63alt.), Sunrise and Hope are directly across Turnagain Arm. The train follows Turnagain Arm to POTTER 100.6m. (32alt.), where Turnagain Arm empties into Cook Inlet. West across Cook Inlet is the Alaska Range, and on a clear day Mt. Iliamna (10,017alt.) can be seen 145 miles to the southwest. Chester Creek is crossed at 112.8m.

ANCHORAGE 114.3m. (p.o., 30alt., 2,277pop.), an incorporated town at the head of Cook Inlet, is the location of the repair shops and general offices of the Alaska Railroad. It is a center for quartz and placer gold mining, coal mining, fishing, canning, and some fur farming and trapping. The *Anchorage Times,* a daily newspaper, is published here.

Anchorage was founded in 1914 as a railroad construction camp. In 1915 the first sales of town lots were held. Water sold at five cents a bucket, and the camp garbage was dumped on the outgoing tide once every twenty-four hours. Finally, evacuation of the temporary town of Anchorage was completed, and the 3,000 inhabitants, reported a contemporary newspaper, were "transferred to their new quarters on the government townsite. The process of moving has been progressing steadily for the past three weeks and all available teams and wagons have been busy in this exodus at the rate of two dollars per hour. The new site of Anchorage is beginning to take on the appearance of a town. The buildings going up are of light construction. There are many tent houses still in existence. A temporary water supply is installed and a permanent system of waterworks is to be begun at once." A reserve district was established beyond the townsite for laborers. "This is mostly for the benefit of the foreign laborer, the so-called 'bohunk' class," wrote a correspondent of the *Seattle Post-Intelligencer,* "of which there is a large number employed on the Alaska Railroad construction. Men of this class do not invest in town lots, and it is considered desirable to keep them in the country for future railway work." Common laborers were paid thirty-seven and one-half cents an hour and skilled workers fifty cents per hour—smaller wages than Alaskans were used to getting. A strike occurred in 1916, and as a result minimum wages were raised to forty-five cents an hour. By 1917 the town had grown to an estimated population of nearly 6,000 and was governed by a manager appointed by the Alaska Engineering Commission, John F. Coffey, assisted by an advisory board elected by the people. In 1920 the Federal government relinquished its control of town affairs and granted patents to lots sold five years before. An election was held, a common council chosen, and the decision made to incorporate as a town.

A network of excellent auto roads connects Anchorage with nearby farms and mines. The Anchorage-Palmer Highway (bus service), 50 miles long, connects the town with the important farming area of Palmer (see below) and passes over the Knik River bridge, the longest steel highway-bridge in Alaska, 2,007 feet long, weighing 550 tons, and costing $192,000. The Anchorage Loop, 19.5 miles, serves farms and homesteads northeast of Anchorage. The Spenard Road, 5 miles, connects Anchorage with Lake Spenard, a plane-base and summer resort. This road is connected with Lake Otis Road, 3 miles, by Firewood Lane, about 1 mile. The Airport Road, 3 miles, connects the town with the airport, Merrill Field, and continues to dairies and homesteads. The Radio Road, 0.25 mile, leads to Government Hill, location of the receiving station of the keystation of the Alaska Communications System. The transmitters are located 7 miles from the city, and both are operated by remote control from the center of town, where there is also a radio broadcasting station, KFQD. This station is heard all over western Alaska, and is so popular that Eskimo babies are frequently named after its announcer. Excellent tennis courts are available in the city; on the edge of the city is a 9-hole golf course.

Anchorage is the headquarters of the famous Willow Creek gold district and an outfitting point for hunting parties bound for Tustumena Lake, Kasilof River on Kenai Peninsula, Rainy Pass and

Chickaloon districts, famous for moose, sheep, goats, and brown, black, and grizzly bear.

A few miles east of Anchorage are the Chugach Mountains, the oldest rocks in the district. They are of two types: one, a sedimentary rock that was deposited in the sea, and the other, a volcanic rock composed of lava flows and ash beds similar to those around many of the present volcanoes. The volcanoes that formed the volcanic rock of the Chugach Mountains have long since been obliterated, and their locations are not known. Millions of years were necessary for the rocks of the present Chugach Range to form, become consolidated, and finally lift up very slowly into the present mountains. As these rocks were pushed up, streams formed from the rainfall slowly cut into them, carving out valleys and moving the material seaward to be deposited again.

In the Eocene period, swamps were numerous and extensive, vegetation flourished in this part of Alaska and formed great thickets in what is now the Susitna Valley, Knik Arm, and Cook Inlet. Occasionally, streams from the mountains covered up the accumulated vegetation with a few to several hundred feet of silt, sand, and gravel. Again vegetation would grow profusely. This period marks the formation of the coalbearing rocks that are now seen in the Susitna and Matanuska valleys and Cook Inlet. The climate was much warmer than at present, but yet not entirely tropical. Palm leaves indicative of a sub-tropical climate like that of southern United States, and sequoias, like those from northern California, are found in the coal beds.

Eventually, with the uplift of the swamps, the coal-forming period drew to a close. The coal formations were then subjected to a long pressure; they became consolidated and were folded. Where the pressure was greatest, the vegetable matter was ultimately changed into bituminous and even anthracite coal, as in Matanuska Valley. Where the force was less intense, the change was not so great, and lignite coal, as on Cook Inlet, was the result.

After the uplift and folding of the coal beds, the drainage was somewhat similar to that of the present time. Cook Inlet, Knik, and Turnagain Arms, however, were not in existence. Instead, the Susitna River flowed down what is now Cook Inlet and emptied into the sea near Kodiak Island. Near Point Possession it was joined by a river that occupied a valley which is now Turnagain Arm, and the Knik and Matanuska rivers flowed directly into Susitna River.

The next known page in the geological history of Anchorage, and probably the most spectacular, was the glacial period, or Ice Age, the imprint of which is still seen in almost all of Alaska. What brought about this ice age is conjectural—perhaps because of a colder climate or increased snowfall in winter, the snow remaining in the mountains after the summer's melting became greater year by year. As the snow increased in thickness, it was compressed into ice; as the ice became thicker in the mountains, it slowly moved down the slopes into the valleys, because of the ever-increasing pressure behind.

The movement of the ice was slow and irresistible, similar to that of partly cooled tar down a slope of low angle. From all of the mountains such ice streams were formed. Down the valleys of Ship Creek, Eagle River, Turnagain Arm, down the Knik and Matanuska valleys, the ice streams of glaciers moved. All finally joined with a similar ice movement in the Susitna Valley to form one mighty glacier that moved down the present Cook Inlet as far south as Kodiak Island.

As the glaciers moved down the valleys, they ground and carried the rock in a manner similar to that of the present streams. They smoothed ridges and left scars on valley walls, which are visible even today. The face of the Chugach Mountains indicates that the ice was over 3,000 feet thick in the vicinity of Anchorage. Susitna Mountain, over 4,000 feet high, west of Anchorage, was probably entirely covered with ice.

Again the climate changed; it grew warmer, so that, year by year, some of the ice melted and the front of the glacier receded. Today the glaciers remain only in the mountains, and with a few exceptions are still retreating. The melting ice, coming from the front of the retreating glacier, eroded, transported, and deposited the rock debris which the advancing glacier had picked up. So came into being the gravel benches on Cook Inlet and Knik Arm, upon which Anchorage is located. This gravel is sometimes several hundred feet thick, and in most places rests directly on coal-bearing rocks.

Occasionally large pieces of ice from the retreating glacier were left stranded and subsequently were covered with gravel. Slowly melting, they eventually left depressions in the otherwise flat surface of the gravel plain. One such depression can be seen on the Anchorage golf links. There are many north of Whitney, and they are still more numerous in certain sections of the Matanuska Valley.

Today the streams coming down from the mountains are slowly dissecting and eroding the gravel benches around Anchorage, aided by the high tides, which slowly undercut the bluffs facing Knik Arm and Cook Inlet. All of the streams entering Knik Arm, particularly the glacial streams such as the Knik, Matanuska, and Eagle rivers, are carrying and depositing silt, sand, and gravel. Knik Arm is slowly becoming wider and shallower. Eventually, though not for many thousand years, Knik and Turnagain Arms will become entirely silted up, and only rivers will flow through the area to empty into Cook Inlet, which will undergo the same process.

Some of the silt carried by the Knik and Matanuska rivers is deposited in time of high water on the river bars. The prevailing down-valley winds pick up this silt and deposit it in the vicinity of Palmer. So the fertile soil of the Matanuska Valley, in some places twenty feet deep, has been built up. This process is still going on, as those who have witnessed the frequent dust storms in this area will readily testify.

Although Anchorage is the center of a number of outlying mining districts, no mining is done in the immediate vicinity. Discoveries of gold, silver, and lead in the Chugach Mountains to the east indicate that commercial deposits may yet be found. The gravel benches furnish a valuable supply of sand and gravel for local building purposes. Clay suitable for common brick and tile also occurs in the immediate vicinity. Near Potter is a bed of limestone that may some day be utilized locally. In a few of the neighboring lakes are small deposits of calcareous marl, which has a potential value as land plaster, for reducing the acidity of agricultural soils.

Underneath the gravel benches of Knik Arm and Cook Inlet, and occurring at the surface in some places, are coal beds. Although the coal is of low rank (lignite and sub-bituminous), it has a potential value for local domestic use. It is probable that from coal such as this the future fuel supply of the world will come; rapid progress in the improvement of the hydrogenation process has resulted in the production of a half ton of fuel oil and gasoline from one ton of such coal.

TYONEK (p.o., 78 pop.) is on the east shore of Cook Inlet, about 50 miles from Anchorage. This was once part of the Moquaukie

Indian Reservation and a Native school is maintained here. SUSITNA (p.o., 39 pop.) on the Susitna River is north of Tyonek and about 65 miles northwest of Anchorage.

At WHITNEY 119.1 m. (222 alt.) are power and cable lines running due east on the left to a powerful radio station operated by remote control from Anchorage. Eagle River, 127.5 m., is a glacial stream. Eagle River Canyon is spanned by a steel viaduct bridge 69 feet high. At 140.8 m. is Eklutna River.

EKLUTNA 141.2 m. (p.o., 50 alt., 158 pop.) is the site of the Eklutna Industrial School, operated by the Bureau of Indian Affairs for Native children, with an enrollment of over one hundred boarding students, both boys and girls, who come from as far north as Wainwright, as far south as Juneau, and as far west as the Aleutian Islands. Originally located at Tyonek on Cook Inlet, the school was moved to Eklutna in 1924. The classes are so arranged that each pupil spends a half day in academic studies and a half day in industrial work. The academic work includes commercial courses, music, and standard grade and high school subjects; the industrial subjects are sewing, ivory carving, metal work, mechanics, carpentry, and farming. In addition the students are taught hygiene and nursing. Regular gymnasium classes are held both for boys and for girls, and the students enjoy many summer and winter sports. The library contains about eight hundred volumes. A department of the school is maintained for blind Native children, where Braille, academic subjects, typing, and arts and crafts are taught. The school is self-governed through dormitory clubs organized around the three dormitories on the campus—two for boys and one larger one for girls. When the salmon begin to run the boys take turns going to the fish camp about 15 miles away, where they catch many salmon for winter use. The girls gather and can the wild berries. The upkeep of the school and all domestic work and cleaning are done by the students themselves, student inspectors seeing that the work is well done and finished at the proper time. Most of the students return to their native villages after graduation, where they carry on and teach others the arts and subjects they have learned.

REED 142.3 m. (35 alt.) is the station of the hydroelectric plant that supplies power to the city of Anchorage and the Alaska Railroad repair shops. Knik River at 146.4 m. and Matanuska River at 148.3 m. are glacier streams. MATANUSKA 150.7 m. (p.o., 36 alt., 330 pop. in 1930) is the center of a large agricultural district. Its name is a corruption of the Russian for "copper river." Near here the University of Alaska maintains an agricultural experiment station. From this point 27 miles of branch line connect with Palmer, Moose Creek, Premier, Jonesville, and Eska—bituminous coal regions.

Palmer (p.o., 920 pop. in 1930), 6 miles from Matanuska on the branch railroad line, 50 miles from Anchorage via the highway, is the center of the Alaska Rural Rehabilitation Corporation, administered by the Federal Department of the Interior, but until Sept. 3d, 1938, operated by the Federal Emergency Relief Administration. The colony consists of approximately 170 families from the drought-stricken areas of the middlewestern states. The Matanuska Valley Farmers Cooperating Association was incorporated in 1936 under Territorial law. As rapidly as possible various activities of the community are being purchased by the cooperative from the Federally controlled corporation.

Palmer, in appearance not unlike a western county seat, has a railroad station, a post office, a weekly newspaper, the *Valley Settler,* restaurants and stores, and a model community center. The three-story community center includes a large combination community hall and school building, hospital, trading post, warehouse, dormitory, offices, a power plant, and the residences of corporation officials. A creamery is in operation and preparations are being made to install a vegetable cannery. Plans are being made to place the entire colony on an independent footing as soon as possible. Each colonist has a farm of from 40 or more acres, selected by lot. The colony covers 10,375 acres.

In May, 1935, colonists from the relief rolls of northern Minnesota, Wisconsin, and Michigan bundled off the train onto a wind-swept flat. Living in a congested tent city, the colonists, many of whom had never before been away from the county in which they were born, and some of whom were already homesick, set out to clear the land for their future homes, their pay calculated in accordance with relief scales current in Alaska. Lots were drawn and the colonists financed in the purchase of land, the construction of houses, barns, and other necessary buildings, fencing, livestock and equipment, furniture, hardware, and groceries until they became self-supporting. Equipment for clearing land and transportation facilities were provided by the Federal Emergency Relief Administration, to be liquidated by the use of rental charges on a per hour or mileage basis. Debts incurred by the colonists were made payable over a period of thirty years, accrued interest at three percent becoming due and payable at, or before, the end of the third year.

In July scarlet fever, measles, and chickenpox broke out among the colonists' children. Recognizing a common danger, colonists, carpenters, laborers, and officials alike hurriedly began to reconstruct the community hall into a field hospital. At 2 A.M. on July 12 a colonist child suffering from scarlet fever was admitted from his tent home as the first patient of the Matanuska Valley Hospital. Plans were drawn for a permanent hospital building, and in the meantime, in a building heated by four red-hot stoves and ventilated by enormous cracks, nurses carried on under trying conditions. On November 30, patients were transferred to the new hospital building, containing an X-ray apparatus, a laboratory, an operating room, and—a very important feature—a separate maternity ward, delivery room and nursery. Babies arrived at a rate that set a record for Alaska—in two years, 120 children were born in the colony.

Meanwhile colonists slashed timber, cleared moss and undergrowth from the land, and Diesel "cats" growled their way over the tracts, pulling stumps. Barns, houses, and outbuildings were erected according to plans drawn up in advance. Some of the more skilled workers found they could work for the corporation and thus hire more labor done than they could accomplish themselves. George Connors, of Tract 132, drew eight dollars a day as a finish carpenter, and with his wages hired two men five days a week at sixty cents an hour to clear his land. Others sold the milk of their cows to the families of the administrative staff, hospital, and commissary. Skilled truck farmers devoted their attention to vegetables, raising nine tons of potatoes on a single acre, cabbages weighing thirty pounds, six-inch pea pods with peas like small marbles. Oat-and-pea hay, a combination developed by the Experiment Station, ran almost three tons to the acre; and wheat threshed forty-three bushels to the acre.

By the fall of 1936, at the end of their first full season, Alaska's new farmers looked out over fertile fields from barns bulging with crops. Behind them lay eighteen months' hard work; ahead of them were years of more hard work. There were some success stories, and some failures. The wails of disgusted colonists who quit and made way for newcomers from the list of thousands of applicants were picked up by papers in the States and broadcast to the nation. Some farmers cleared their first year, with lots, houses, and barns, owing the corporation as little as $1,500. At the other extreme were colonists who owed the corporation anywhere from $6,000 to $14,000. The complaints, though magnified by the press in the United States, had a solid justification. Eighteen tractors could not work on two hundred tracts at once; the sawmill could not saw timber fast enough to supply boards for houses and barns; transportation facilities were inadequate. Most of the wails were good healthy ones, for while uttering them the colonists dynamited stumps as they waited their turn with the tractors, slashed overgrowth and dug foundations by hand, clubbed together on transportation. At the end of 1936 children were roller-skating over streets through which they had plodded in mud, Palmer had grown into a flourishing town, and readers were goodnaturedly overlooking wrong font letters in the first issue of the *Matanuska Valley Pioneer*. The colonists' newspaper was printed on a ramshackle press fed thirty years before by Dan Kennedy of Anchorage, on which had been printed some of John Frame's political dynamite, and still bearing an old shipping label, *N. L. Sherpy, Skagway, Alaska, via Tacoma wharf*. The most recent incident in its colorful career had been its transfer in a gambling debt to Jim Virdin at Ketchikan, who sold it to Jack Allman, editor of the *Pioneer*. A church was built, 4-H clubs and the Future Farmers of America organized, and Anchorage residents began to complain to their grocers that they couldn't get enough Matanuska vegetables and milk and butter marked with a trade name new to Alaska, "Matanuska Maid." Less than a score of colonists had died, and babies had arrived on the average of once a week. By 1938 Palmer and its immediate vicinity had electricity, telephone, an excellent road system, a post office, a garage and farm-machinery shed, a hatchery, a beauty shop and barber, a modern hospital, a sewerage system, and several stores and restaurants. A lodge has recently been opened to accommodate tourists.

The full story of Matanuska has not yet been recorded. But let the stories of two of the colonists speak for themselves.

Lawrence Dreghorn, "Scotty" to his friends, comes from Wolverine, Michigan, and was awarded Tract 175 in the original drawing. Scotty was 43, high in the ages of the original colony group, and with Grace, his wife, there were eight in the family: William, the oldest boy, 14; Gordon, 12; Mary, 11; Lawrence, Jr., 9; Hamish, 1½. A baby girl was born, October 18, 1936. Scotty was born at Peterhead, Aberdeenshire, on the east coast of Scotland, and you'd never doubt the fact once you heard him roll his r-r-r-rs. There is still a lot of thistledown on his tongue. He came to America as a lad and was naturalized when he attained his majority. He went back to Scotland for a visit, and when the war broke out joined up, serving with the "kilties" in a regiment of the Gordon Highlanders, of the green and yellow tartans.

Scotty isn't very large, but he's physically a tough specimen. He had to be to go through four years of battling in France, interspersed with campaigns in both Italy and Egypt. Proof of a grateful government's appreciation of Scotty's soldiering can be seen in the medals he is entitled to wear—six of them. Scotty does not have to look at the medals to remember he was in the war, though. A shrapnel wound is a constant reminder of those tough years.

After the war was over Scotty came back to America. He was trying to make a living with dairy cows and a raspberry patch when the chance came to sign up for the colonization project here. It didn't take the Dreghorns long to make up their minds.

Once on his tract the plans for a new home began to take definite shape. He has built a comfortable house, a barn, hog house, and other buildings, and by the end of 1936 had twenty-six acres plowed and a total of thirty cleared. His, like most of the others in the Butte section, is an eighty-acre tract.

His plans were for dairying. He bought only three cows, the cheapest the corporation had to sell. This wasn't because he was Scotch, but because Scotty can tell a good milker when he sees one even if she is poor and badly run down after a long ocean trip. He soon had his stock in fine shape, and the first year raised three calves. With Donald Parks, a neighbor, he was the first to attempt commercial production of cream. They shipped to Anchorage early in the history of the colony, but the venture was a failure because of transportation costs. When the creamery opened he realized on his investment in cows, and supplied the hospital, dormitory, and a number of staff families with milk. William brought it to town with him on the school bus each morning.

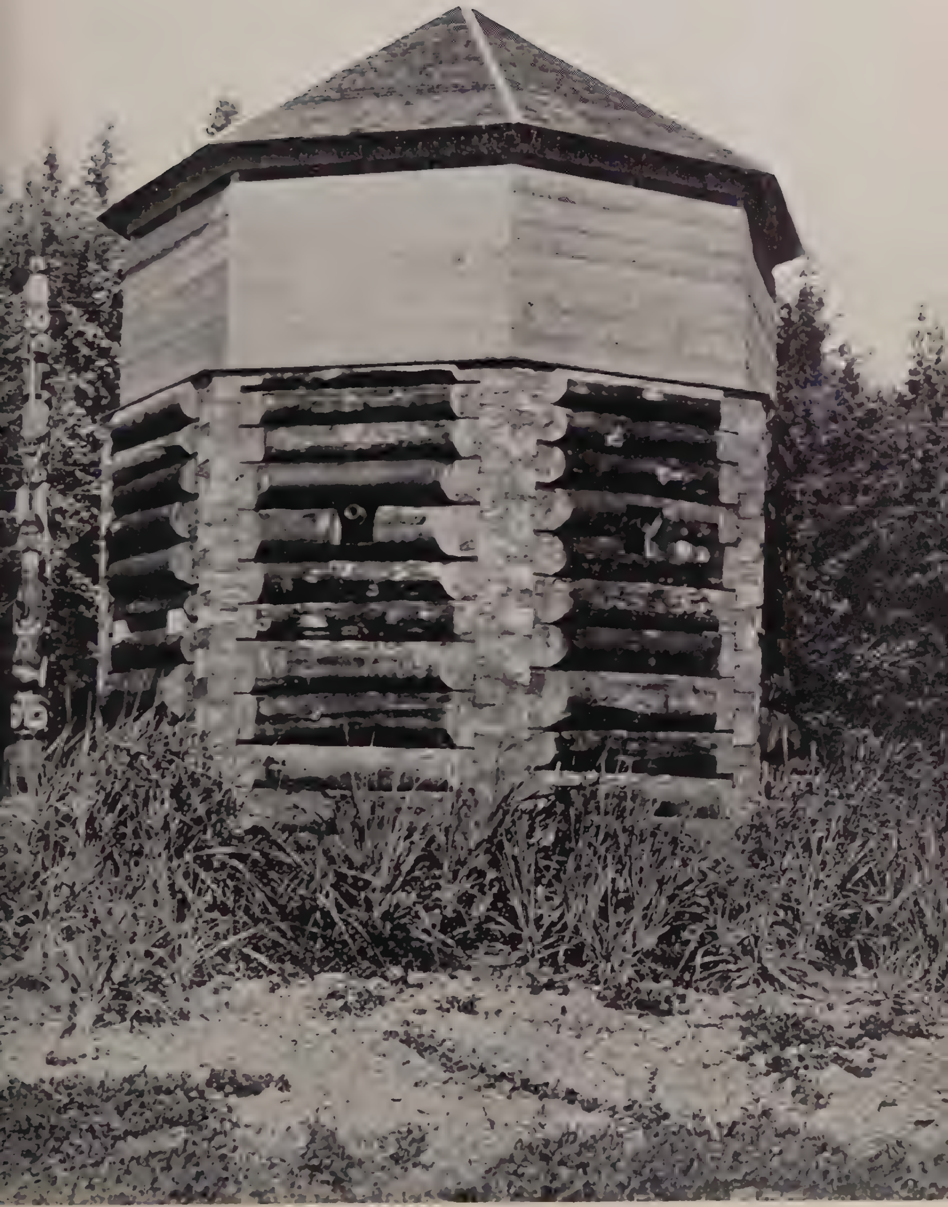
Scotty sees independence in his new farm and says, "Just try and run me out of this country!"

Vanishing Alaska

ALASKA today has numerous relics of the Russian America Company—fortifications, commercial buildings, weapons, domestic utensils—which are being preserved for their historic interest. In the seventy years preceding the purchase of Alaska by the United States the company Christianized many Indian tribes and taught them the rites of the Eastern church. This form of worship persists today through most of the region in which the Russian influence was felt, and is the only living remnant of the Russian occupation.

Before the arrival of the white man Alaska was an Indian country with at least four easily distinguishable groups of people, each with its characteristic mode of life. The Indians, as a people, have remained, but Indian culture has practically disappeared. Early, first-hand, accounts of this culture differ according to the preconceptions of the observer. Eighteenth century cosmopolitanism supposed that the people were gentry, though not British, while nineteenth century Darwinism supposed that they were something rather early in the process which produced Queen Victoria. The twentieth century knows little more about these people than is revealed in their arts and crafts, numerous examples of which have survived the period of neglect and are being preserved in museums and national monuments.

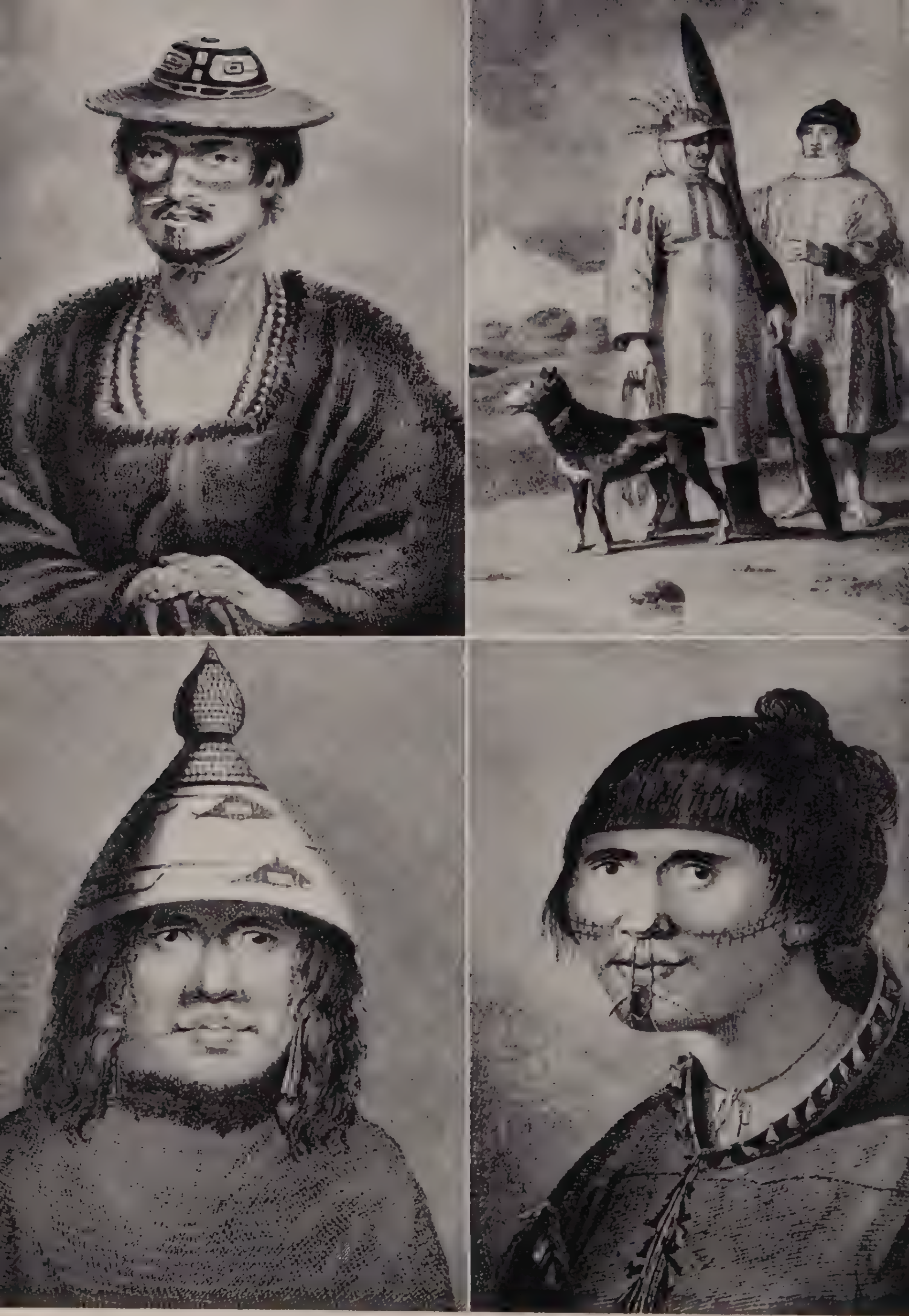
The first American period in Alaska belonged to the pioneer, the lonely prospector and trapper. Father Duncan's kitchen at Metlakatla is typical of this life, which is rapidly passing into history with the Russian and Indian periods which preceded it.



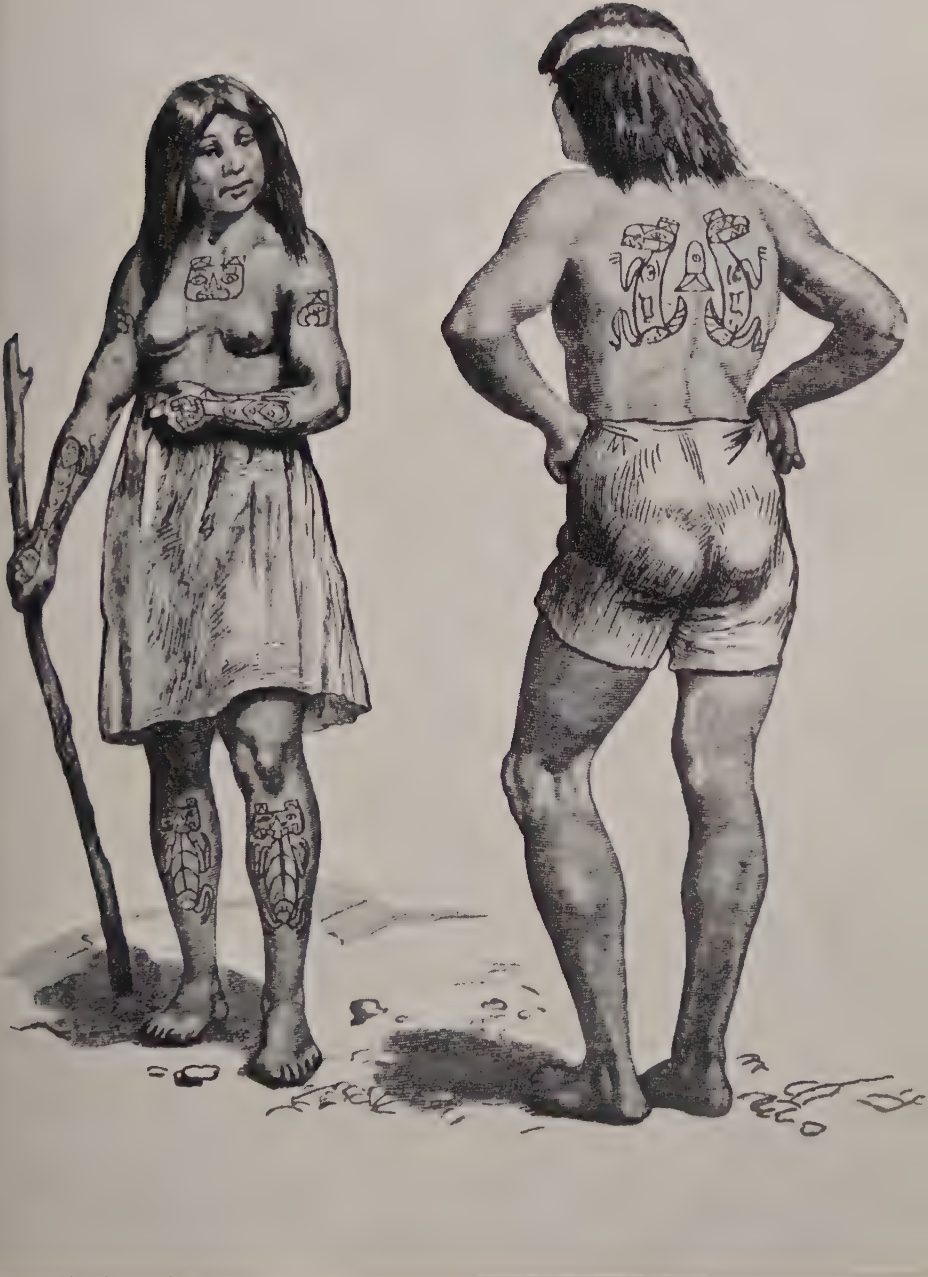
Russian Blockhouse, Sitka

Russian Church and Graves, Eklutna

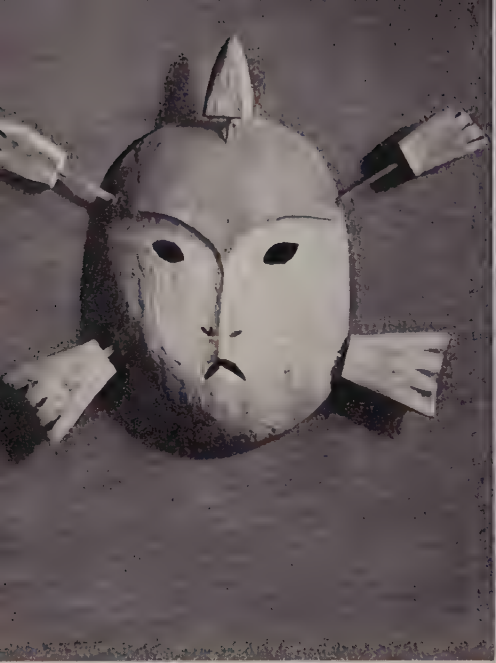
St. Michael's Cathedral, Sitka

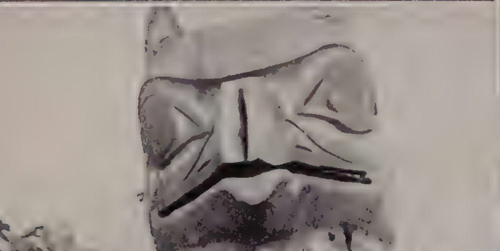


Aleuts and Haida (Cook's Voyages)

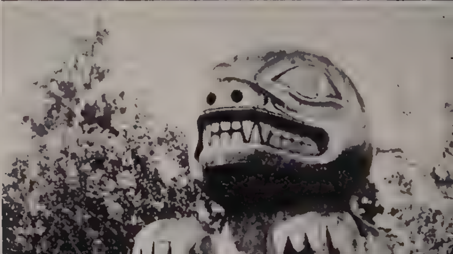


The Haida (Bureau of American Ethnology)





ABOVE: *Eskimo Mask, Juneau Museum*
BELOW: *Eagle, West Prince of Wales Island*



ABOVE: *Eskimo Basket, Juneau Museum*
BELOW: *Bear, Kasaan National Monument*

Entrance to Sitka Monument

Father Duncan's Kitchen, Metlakatla

Let Mrs. Victor Johnson, another colonist, tell her story in her own words.

"This morning as I strained the pail of rich Guernsey milk from our cow, I thought of June, 1935, just after we had arrived in the valley. Milk was at a premium and what little could be obtained was reserved for the families having small children. Never having lived where fresh milk could not be obtained, I had never learned to use canned milk except in cooking. For a long time very little cooked cereal, which ordinarily forms the main part of our breakfast, was served in my tent. Then the cows arrived. What a drawing we had! How pleased I was with the little pail of milk our cow gave morning and night! True, it was only a couple of quarts, and she dried up in August, but how good it tasted while it lasted!

"We set some hens this spring. For weeks we tended them, seeing that they had food and water and left the nest for exercise. Then the shells began to pip, and fuzzy yellow chicks came out, downy ducks, and geese, and shy little turkeys. How cunning they all were! How does a little duck with a chicken mother know that ducks eat a bite of food and then run to the water dish?

"There is a little Guernsey calf frolicking in the pen this minute. At first she was so wobbly and awkward. Now she is a little beauty. She holds her head up to have her neck scratched, and she knows what is what when a pail of milk comes her way.

"Yesterday was Club Day. Work was hurried through in the morning, and probably some of it was left undone. Lunch was set out for the family at home, and mother took a bowl of salad, a box of sandwiches or a cake, and went to Club. As many other women as could get away for the day were there. Housekeeping ideas were exchanged; sewing demonstrations and short cuts, discussed. I learned how to put on a minute-and-a-half patch for overalls. How many hours since my marriage have I patched overalls and other work clothes! I never thought of such a quick, simple way to put on a patch. Noon came, lunch was served, cafeteria style. The coffee was hot and good. Friends gathered in twos and threes, and visited over their plates. I noticed that the gowns were just as neat, hair cuts just as trim, and faces as fresh as any ordinary group of women in similar gatherings anywhere.

"Farm life in the Matanuska Valley lonesome and monotonous? No indeed! Full and satisfying? Yes, most surely."

Last of all, listen to Sourdough Sam, emphatically not a colonist. Sam has a pretty good slant on all this activity in the Matanuska Valley. He has lived there for years, but just about a month before there was anything said about colonizing the district, Sam headed back into the hills at the head of Chickaloon to do a little prospecting on a creek he and Tex Cobb knew about. He went alone except for his old dog, Bum; and he never saw a soul till he returned last September. You should get him to tell you about it. You'll recognize Sam if you see him around camp. He's tall and straight as a birch sapling, and as tough as a piece of Nigaluk whalebone in spite of his seventy years. His hair is white and curls a little over the collar of his shirt. He has a somewhat scraggly white moustache that is a bit tobacco-stained in the middle. His eyes have the clearness of glacier ice, but they are not hard. If you see him, go right up and talk to him.

When Sam left for the hills there were a few scattered families and only two miles of graveled road. When he came hiking back he expected to find things just the same. He was coming down an old Indian trail near Cottonwood Lake, right near Swanson's place, when he suddenly stumbled on a fine graveled road that shouldn't have been there at all.

Just then a big staff sedan—Colonel Hunt's—bore down on him with the horn wide open. Sam jumped about twenty feet.

"Wa'n't nothin' like that 'round here when we left," he remarked to Bum. The dog kept close to Sam's heels as they left the road for a trail leading off toward Charlie Marino's.

In less than a mile Sam ran into a big 40-horse Diesel caterpillar clearing land. "Wa'n't nothin' like that here, neither," he reminded Bum.

Sam shook his head, skirted the machine, and ran smack dab into a great big seven-room frame house all freshly painted. Old Sam can take a shock, but he staggered under that one. The blame house was standing right on the very spot where he'd killed a moose the fall before. And when he bumped into a well rig chugging its way down to water he looked at it with startled eyes. "And I ain't had a drink in six months," he said to Bum.

Down the road they went past Camp No. 2, past slashers and building crews at work, past Harry Sears and his gang with their big caterpillar-drawn potato digger. It was very strange to Sam. By all rights he would have been lucky to have met a soul on the trail, and an auto whizzing past would have been a real event.

At last they came to Matanuska, and the little town was the first thing in the valley he really recognized. He dropped into Phil Allen's place, but he didn't have much to say. He knew that marshals usually take charge of people who imagine they see things that don't exist, and there was Joe Hofman with his gold badge all ashine.

He studied out the whole situation through a pint of rye. It wasn't possible that this could be the same Matanuska Valley he had left only six months before; but here he was . . . all these strange people on the road! All this building and excitement! He couldn't be dreaming, could he?

At last he decided to take the bull by the horns. He'd find out whether he'd missed too many boats or not. "Say," he demanded of Phil, "what in hell's been going on around here anyway?"

Phil has a sense of humor. "Going on? Why, nothing much. Valley has grown a lot since you left here ten years ago, hasn't it, Sam?"

"TEN YEARS!" You could have heard Sam clear out across the Knik flats. He stuck a fresh pint in his pocket and, avoiding Joe, strode rapidly off toward his cabin up by Vic Morgan's.

"Ten years!" He repeated it over to himself many times. At last he turned to the dog.

"Ten years! It don't seem possible, Bum! Yet I hearn of a feller oncet that slept longer'n that. Yep! Feller named Wip van Rinkle."

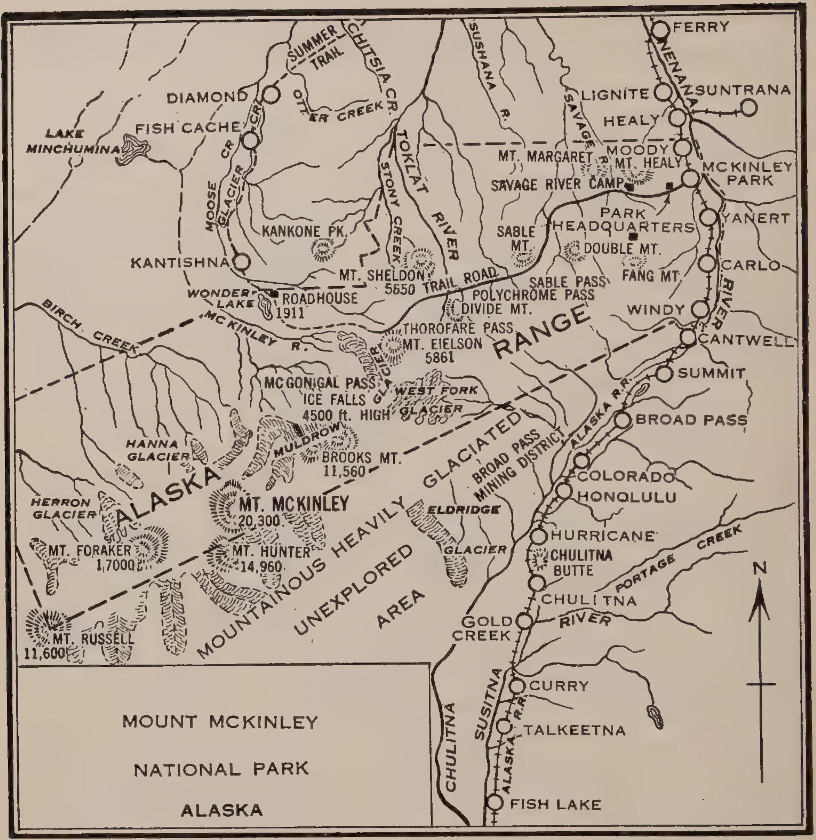
Wasilla Lake 159m. has excellent fishing. WASILLA 159.8m. (p.o., 339alt., 600pop. est. 1938) was named after a chief of the Knik Indians, and is perhaps a corruption of the Russian given name "Vasili." The town is the central point of 176 miles of good roads that reach from the head of Knik Arm through the Matanuska Valley agricultural district to the gold mines of Willow Creek and the coal mines of Moose Creek. From Wasilla good fishing spots are reached by boat or automobile. One-fourth of a mile north of Wasilla is a large mink ranch, and at 174.2m. is Little Susitna River. From NANCY 180.7m. (236alt.), Rainy Pass trail, discovered and named by Brooks in 1902, leads through the McKinley Range to the Iditarod and Kuskokwim mining districts. Lake Nancy with its beaver dam is on the left. At 183.2m. on clear days is a good view of Mt. McKinley. From WILLOW 185.7m. (232alt.) a road leads to Willow Creek, 187.1m., an excellent trout stream in the heart of a gold mining district. Little Willow Creek 190.5m. is an excellent trout-fishing stream. At 199m. is Kashwitna River and at 212.6m., Montana Creek, another excellent trout stream. At 224.3m. is a panoramic view of Mt. McKinley (20,300 alt.), Mt. Hunter (14,960 alt.), and Mt. Foraker (17,000 alt.), and, further to the west, of Mt. Russell (11,600 alt.) and Mt. Dall (9,000 alt.). TALKEETNA 226.7m. (p.o., 354 alt., 125 pop. est. 1938), its name said to mean "river of plenty," at the meeting point of the glacier-fed Talkeetna, Susitna and Chulitna rivers, is the starting point for gold-mining operations in the Cache Creek country. There is a good airport in town. Mt. McKinley is visible from this point, and frequently from here on. At 241.7m. is Lane Creek, near which are many beaver dams. PETERSVILLE (p.o.) and YENTNA are villages west of the railroad. East of the railroad and slightly north of Curry is LUCKYSHOT (p.o.).

At CURRY 248.5m. (p.o., 546 alt., 91 pop.), the halfway point between the coast and the Interior, passengers spend the night in the Curry Hotel, operated by the Alaska Railroad. The hotel has excellent modern accommodations for 150 guests. After a day of traveling on the Alaska Railroad, most people after nodding over dinner are glad to hurry upstairs to bed and fall instantly asleep to the murmur of the Susitna River. There is nothing else to do, anyway, as there is neither bar nor library—not even a newsstand. The wildest extreme in excitement offered is a walk across the suspension footbridge spanning the Susitna up a trail on the opposite bank through a series of berry patches.

Next morning, just north of Gold Creek 263.2m. (731 alt.), the railroad crosses the Susitna River, and at 269.2m. is the second of four crossings of Indian River, where there is excellent grayling fishing. From this point the railroad passes through a canyon for about a mile. At 270.2m., on the right, is a beaver dam and lake. From CHULITNA (1280 alt.) 273.8m. to 279m. are a series of splendid views of Mt. McKinley. The railroad reaches its closest point to Mt. McKinley, 46 miles distant, at 279m. There are higher mountains in the Himalayas and the Andes, but travelers say these seem lower than Mt. McKinley, which rises abruptly to a great height. The summit of the first Alaska Range is at HURRICANE 281.4m. (1,688 alt.). Hurricane Gulch at 284.2m. is spanned by a steel bridge 918 feet long and 296 feet above the creek. On the left is Chulitna River, crossed at 286m. by a suspension bridge used by prospectors. Honolulu Creek is at 287.7m. HONOLULU 288.7m. (1,456alt.), is the beginning of trails to the Broad Pass mining district. Near here are many beaver dams, most of them on the left. At 292.3m. is crossed the east fork of the Chulitna River. A trail also leads from COLORADO 297.1m. (1,954alt.) to BROAD PASS. The middle fork of the Chulitna, close to its headwaters, is crossed at 305.7m. At 310m. is the summit of the continental divide (2,363alt.), the lowest railroad pass in the entire Rocky Mountain chain. Near here is Summit Lake, draining both to the Bering Sea and the Pacific watersheds. At CANTWELL 319.5m. (p.o., 2,212alt.) the descent begins, and the railroad follows Jack River to Windy, at the confluence of Jack and Nenana rivers. Cantwell, named after Lieut. John C. Cantwell, who explored the Kobuk River region in 1884-5, is the starting point for the Valdez Creek gold-mining district, about 50 miles distant. On the left is a landing field for planes that freight supplies to the miners. Windy Creek 323m. is the southern boundary of Mt. McKinley National Park. From WINDY 326.7m. (2,056alt.) is seen Panorama Mountain (5,800alt.). The Nenana River is now followed to Nenana, its course making many horseshoe bends. At 341m. on the right, the Yanert River empties into the Nenana River, and good views are had of Mt. Deborah (12,540alt.) and Mt. Hayes (13,940alt.). Riley Creek is crossed, 102 feet above the stream, at 374.4m.

MCKINLEY PARK 347.9m. (p.o., 1,732alt., 49pop.) is the entrance to Mt. McKinley National Park, and its post office. KANTISHNA and DIAMOND (p.o., 1pop.) are west of the park.

MT. MCKINLEY NATIONAL PARK, second in size only to Yellowstone, with an area of 3,030 square miles, was created by act of Congress in 1917, and was enlarged to its present area in 1932. The park is administered under the National Park Service of the Department of the Interior by a resident superintendent. It is a vast wilderness, with ice-capped peaks, grinding glaciers, and sphagnum-covered foothills sweeping down to forests of spruce in the valleys. "Here lies a rugged highland area far greater in extent than all Switzerland, a virgin field for explorers and mountaineers," wrote A. H. Brooks, chief of the Alaska Division of the United States Geological Survey. "He who would master unattained summits, explore unknown rivers, or traverse


MOUNT MCKINLEY
NATIONAL PARK
ALASKA
FERRY
NENANA
LIGNITE
SUNTRANA
HEALY
MOODY
MT. HEALY
MCKINLEY PARK
YANERT
CARLO
RIVER
WINDY
CANTWELL
SUMMIT
BROAD PASS
COLORADO
HONOLULU
HURRICANE
CHULITNA BUTTE
CHULITNA
GOLD CREEK
CURRY
TALKEETNA
FISH LAKE
SUSITNA
CHULITNA
ALASKA R.R.
PORTAGE CREEK
CHULITNA RIVER
N
SUMMER TRAIL
CHITSIA CR.
OTTER CREEK
DIAMOND
FISH CACHE
LAKE MINCHUMINA
MOOSE CR.
GLACIER CR.
KANTISHNA
KANKONE PK.
SUSHANA R.
SAVAGE R.
TOKLAT RIVER
STONY CREEK
MT. MARGARET
SAVAGE RIVER CAMP
PARK HEADQUARTERS
SABLE MT.
DOUBLE MT.
FANG MT.
SABLE PASS
POLYCHROME PASS
DIVIDE MT.
THOROFARE PASS
MT. EIELSON 5861
MT. SHELDON 5650
TRAIL ROAD
WONDER LAKE
ROADHOUSE 1911
BIRCH CREEK
MC KINLEY R.
MC GONIGAL PASS
ICE FALLS 4500 ft. HIGH
WEST FORK GLACIER
MULDROW GLACIER
BROOKS MT. 11,560
HANNA GLACIER
HERRON GLACIER
ALASKA RANGE
MT. MCKINLEY 20,300
MT. FORAKER 1,7000
MT. HUNTER 14,960
MT. RUSSELL 11,600
ELDRIDGE GLACIER
BROAD PASS MINING DISTRICT
HEAVILY GLACIATED
MOUNTAINOUS
UNEXPLORED
AREA

untrodden glaciers in a region whose scenic beauties are unequaled, has not to seek them in South America or Central Asia, for generations will pass before the possibilities of the Alaska Range are exhausted."

The principal scenic feature of the park is Mt. McKinley, the highest peak on the North American continent. The mountain thrusts its snow-covered peak high into the clouds, reaching an altitude of 20,300 feet above sea level, and rises 17,000 feet above timber line. No other mountain, even in the Himalayas, rises so far above its own base. On its north and west sides McKinley rises abruptly from a plateau only 2,500 to 3,000 feet high. For two-thirds of the way down from its summit it is enveloped in snow throughout the year.

The mountain was probably first sighted in the late eighteenth century by Cook and Vancouver. The Indians called it "Bulshaia" (Russian *bulshoi:* great), and "Traleika," a Native word for "great." In 1896, W. A. Dickey, leading a party of prospectors through the Susitna Valley, saw the peak and named it Denali, supposed to mean "home of the sun." Seven or eight prospecting parties saw the peak in the summer of 1896, compared notes, and estimated its height as around 20,000 feet. Upon returning to civilization, Dickey renamed the mountain upon hearing of McKinley's nomination for the presidency.

Mt. McKinley is crowned by two peaks. The south pinnacle is 20,300 feet in altitude and the north peak is only 300 feet lower. The first attempts to conquer the mountain were made in 1903: one party under the leadership of Judge James Wickersham, and the other, headed by Dr. Frederick A. Cook. Neither was successful, and in 1906 Cook made a second attempt which he claimed was crowned by success.

In 1910, four "sourdoughs" who were not satisfied with Dr. Cook's story of his ascent undertook to climb Mt. McKinley, and two of them, Taylor and Anderson, reached the north peak. For many years a photograph of the group at the summit, framed in a handmade willow molding, hung in Bill McPhee's saloon in Fairbanks. When Bill left the country he gave the photograph to some old-timer living on a near-by creek and since then all trace of it has been lost. In 1912 a party under Dr. Herschel Parker and Belmore Brown succeeded in getting within a few hundred feet of the summit of the south peak.

On June 7, 1913, Archdeacon Hudson Stuck, Harry Karstens (later superintendent of the park), and two companions reached the summit of the south peak. They were the first men ever to achieve this goal. Nearly nineteen years later, on May 7, 1932, a party composed of Alfred D. Lindley, Minneapolis attorney; Harry J. Liek, superintendent of Mt. McKinley National Park; Erling Strom, ski expert from Lake Placid, N.Y.; and Grant Pearson, a park ranger, accomplished the same feat. On May 9 they also climbed the north peak and achieved the distinction of being the first expedition to ascend both peaks of the great mountain.

In July, 1936, the National Geographic Society-Pan American Expedition, headed by Bradford Washburn of the Institute of Geographical Exploration of Harvard University, made a flight over Mt. McKinley in a Lockheed Electra monoplane and took photographs at a height of 17,000 feet with a large Fairchild K-6 aerial camera, using oxygen at altitudes over 15,000 feet. "From the summit of the north peak, whose altitude is over 19,000 feet," reported Mr. Washburn, "this side of Mt. McKinley drops in a terrific slope of glittering ice and rock—one unbroken, stupendous cliff to the plains of the Kantishna 17,000 feet below."

Near Mt. McKinley are MT. FORAKER (17,000 alt.), MT. HUNTER (14,960 alt.), and MT. RUSSELL (11,600 alt.).

The first ascent of both peaks of Mt. Foraker was made by a climbing party, consisting of Charles S. Houston, Harvard student and head of the expedition; Dr. T. Graham Brown, university professor of Physiology Institute, Cardiff, England, who later taught at North Andover, Mass. The north peak was reached on August 6, 1934, and the south peak, on August 10.

SEASON. June 10 to September 15.

ACCOMMODATIONS. At the entrance of the park is a modern hotel, which cost about $350,000 and accommodates 128 persons. Trips into the interior of the park can be made, and tourists are accommodated in tent camps. The Alaska Railroad hopes that it may eventually run direct from Seward or Fairbanks to Mt. McKinley National Park, eliminating the night stopover at Curry.

INFORMATION: Complaints and suggestions should be addressed to the Park Superintendent, Mt. McKinley National Park, Alaska. The National Park Service at Washington, D.C. issues a free booklet, frequently revised, containing information about the park, the gist of which is incorporated here for the benefit of those unable to obtain it before making the trip. The booklet also contains a list of books and magazine articles about the region.

REGULATIONS (summarized): Complete regulations may be examined at the office of the superintendent of the park. Visitors are requested to assist in the administration of the park by observing the rules.

The destruction, defacement, or disturbance of buildings, signs, equipment, or other property, or of trees, flowers, vegetation, or other natural conditions and curiosities is prohibited.

Camping with tents is permitted. When in the vicinity of designated camp sites, these sites must be used. Only dead and down timber should be used for fuel. All refuse should be burned or buried.

Fires shall be lighted only when necessary, and when no longer needed shall be completely extinguished. They shall not be built in duff or a location where a conflagration may result. No lighted cigar, cigarette, or other burning material shall be dropped in any grass, twigs, leaves, or tree mold.

All hunting, killing, wounding, frightening, capturing or attempting to capture any wild bird or animal is prohibited. Firearms are prohibited in the park except with the permission of the superintendent.

Fishing in any manner other than with hook and line is prohibited. Fishing in particular water may be suspended by the superintendent.

Cameras may be freely used in the park for general scenic purposes.

Gambling in any form or the operation of gambling devices, whether for merchandise or otherwise, is prohibited.

Private notices or advertisements shall not be posted or displayed in the park, excepting such as the superintendent deems necessary for the convenience and guidance of the public.

Dogs are not permitted in the park, except by special permission of the superintendent.

Mountain climbing shall be undertaken only with permission of the superintendent.

The penalty for violation of the rules and regulations is a fine of not more than $500, or imprisonment not exceeding six months, or both, together with all costs of the proceedings.

ROADS AND TRAILS: There are 80 miles of graveled automobile roads within the park. The stretch of highway beginning at Mt. McKinley Park Station has an altitude of 1,732 feet above sea level. It is located on a small plateau, surrounded on the north, east, and west sides by mountains in close proximity, and on the south side by the more distant Alaska Range. Park headquarters is located at 2m. on the highway, elevation 2,092 feet. At 12m. is Savage Camp.

At Camp Denali 66m., a fine saddle-horse trail continues into the park to the regions about the base of Mt. McKinley. From Mt. Eielson (5,861alt.) the trail crosses Muldrow Glacier to the head of Clearwater Creek. Mt. Eielson was named in memory of Carl Ben Eielson. Born in North Dakota in 1897, he was an aviator during the World

War and later a teacher in the Fairbanks High School. He did more than any other one man to advance aviation in Alaska. He flew the first government mail route in the Territory and piloted Sir Hubert Wilkins across the North Pole. He crashed in June, 1930, on a search for the Russian steamer *Nanuk,* lost off the Siberian coast. Another trail from Mt. Eielson follows down the McKinley River, in the north central part of the park about 20 miles north of Mt. McKinley. From here may be obtained excellent views of Mt. McKinley's massive bulk from base to peak. Wonder Lake may be reached from this point, and a few miles farther in the same direction is the Kantishna district. In this section may be seen both modern hydraulic mining and old prospectors sluicing out gold by the "97" method; also the driving of tunnels into gold quartz leads which these prospectors hope to develop into dividend-paying mines.

From Savage River camp an interesting saddlehorse trip can be made over the divide and on to the Sanctuary River 22m. From here the trail leads past Double Mountain, across the Teklanika River, and on to Igloo Creek, at 33m.

Through Sable Pass the trail leads over the East Fork of the Toklat River, and then through Polychrome Pass, over the Main Toklat River, on through Highway Pass and Thorofare Pass to the lower rim of Muldrow Glacier. The trail passes the north side of Mt. Eielson, which has been the scene of much prospecting for silver, lead, copper, and other metals.

Near the Savage River camp a trail has been constructed down the Savage River canyon beginning at the Savage River bridge and continuing between steep mountains that rise abruptly from the bed of the river. Grayling is plentiful in the lower end of the canyon.

Accessible from the park road system are the Mt. Eielson and Kantishna lead, zinc, copper, gold, and silver-mining districts. In the Kantishna region are important deposits of antimony, a rare and valuable metal which is important in alloys used in the manufacture of storage batteries, type metal, babbits, and hard lead electrical parts. The oxide is used as a pigment and a glaze, the sulphide in rubber vulcanizing and the manufacture of fireworks and safety matches. This metal is indispensable in time of war.

HUNTING: While hunting or shooting is not permitted in Mt. McKinley Park, hunting parties frequently visit areas adjacent to the park, in the Dall country, west of the park, and in the Wood River country, lying just east of the park boundary, continuing eastward, following the north slope of the Alaska Range to the Richardson Trail.

Excellent hunting for caribou, mountain sheep (*ovis dalli*), moose, grizzly, and black bear may be had in these areas.

The Wood River country is easily accessible, the heart of the game country being reached the second day's travel from Mt. McKinley Park Station or the Savage River camp.

For hunting trips guides, packers, horses, grub, all camp and other equipment, except hunter's guns, ammunition and hunting license, are furnished on the spot. Detailed information and rates will be furnished upon application. Reservations should be made early for fall hunting trips.

FISHING: The grayling, a very hardy species of the trout family, is found in park waters. They are sporty fish and of an average weight of one to two pounds. Large schools may be seen swimming in the waters of Savage River, at the north entrance to Savage Canyon. The angler may also try his luck in Riley Creek, about a half mile from the railroad station, where grayling abound. There are also trout in the park streams which are classified locally as Dolly Varden. Their weight is about one pound.

Practically all the park streams have their sources in the snow-capped mountain ranges. None of them is more than four feet in depth; consequently, during the winter they are frozen almost solid, with only a small trickle of water flowing underneath the ice above the gravel bed. The grayling manages to pass the winter by returning to deeper rivers outside the park and coming back when the ice has disappeared, about the middle of April.

WILD LIFE: Up to September, 1932, 107 kinds of birds and 34 kinds of mammals were definitely identified within park boundaries. Among the larger mammals, the mountain sheep and the caribou are the most numerous. Among the smaller, ground or "parka" squirrels and varying hares or "snowshoe rabbits" are most in evidence. The golden eagle is the most conspicuous large bird in the park.

Caribou are found in no other national park. These North American caribou are related to the domesticated reindeer, which are merely an Old World race smaller and darker than the caribou, with much shorter legs. Owing to their poor eyesight and almost stupid curiosity, caribou are easy to approach, even in an automobile, providing the wind does not carry the human scent to their keen nostrils. The Alaska moose is the largest animal found in Mt. McKinley National Park. It is, roughly, the size of a horse, large males weighing as much as a thousand pounds. It has the distinction of being the largest member of the deer family. Formerly grizzly bears were common along the higher open ridges above timber line at the head of the Toklat River. But because of their destruction by prospectors, who claim that the bears destroy caches (stored food supplies of miners and other men who live in the region), the grizzlies have become relatively rare. The tundra brown bear belongs to a group that includes the largest carnivorous animals in North America. There is good evidence that this species ranges eastward along the north side of the main Alaska Range to the headwaters of the Kuskokwim, near the base of Mt. McKinley.

The white Alaska mountain sheep are among the handsomest game animals of the Mt. McKinley region and are the most fascinating to pursue and observe. Two important distinguishing characteristics of this species are the white color and relatively slender, spreading horns.

The wolf is generally a traveler. Some seasons there will be quite a number of them in the park, at others, very few. In summer they travel alone or in pairs, but in winter they usually gather in bands ranging from six to twelve. Wolverene are not very plentiful, but are occasionally seen in all sections of the park. They travel and hunt alone. Coyotes are new to this section of Alaska, having made their first appearance in the park about 1926. The Alaska red foxes are the largest of their kind, unexcelled anywhere in quality of fur. They are abundant in Mt. McKinley National Park because they are protected from hunting, along with the snowshoe rabbits and ptarmigan which form their chief diet. Being even brighter red than their relatives in the United States, they are quite easy to see against the dark tundra background.

Hoary marmots are often called whistlers from their habit of announcing any enemy's presence with a loud "traffic cop" whistle. They are the Alaska representatives of the common ground hogs or woodchucks of continental United States. They are chunky animals, with strong claws for digging, bushy tails, and coarse hair of grizzly brown color. In former years the park area was a paradise for lynx, but in recent years very few have been observed. There are still some beaver in the eastern end of the park near the northern boundary, and they are showing a remarkable increase in the western area. Marten and mink are found in the timbered country along the northern section of the park; plentiful in some places.

Snowshoe rabbits are to be seen most years in the spruce woods and around willow thickets. In winter the bottoms of their feet are covered with thick pads of hair which facilitate progress over the snow, in the manner of snowshoes. Snowshoe rabbits are often called varying hares, because they change from brown in summer to white in winter. The Alaska cony, a rock dweller, sometimes called little chief hare, or pika, is the strangest of the small mammals of the park. Their color is the same as the rocks on which they perch, and their bright eyes and sharp ears are keen to sense any danger. Among the smaller animals the ground squirrels are most in evidence. They are quick to make friends and exploit the relationship. Around the camp at the head of Savage River they prove a menace to everything edible, and to human peace and quiet as well.

The visitor to the Mt. McKinley district is frequently surprised at the number of "sea gulls" that breed there, over 300 miles inland, far removed from the salt water of the seacoast. In walking along the stony gravel bars near Savage River camp he is likely to be startled by having one or sometimes a pair of these gulls swoop down on him, almost striking his hat. Such attacks come without warning and are merely the gulls' method of driving a caribou, fox, or such other native intruder away from their nest.

The Alaska willow ptarmigan is one of the noteworthy birds of Mt. McKinley National Park. Since willow ptarmigan do not occur in any of our other national parks, they are sought for by visitors here.

The surf bird is the most distinguished as well as the most elusive avian citizen of Mt. McKinley National Park. For nearly one hundred and fifty years, since the species was first given its scientific name, the nest and eggs remained unknown. The surf bird winters in South America as far south as the Strait of Magellan but it breeds among the mountain tops of central Alaska. Twice each year, in migration, it traverses the Pacific coast of North and South America.

TREES AND PLANTS: The black spruce, with its somber foliage and clusters of tawny cones, is the commonest evergreen tree in the park. The graceful paper birch is found in the lower valleys. The cottonwoods and the quaking aspen are near the streams. The willows are abundant. The thickets which clothe the valleys and the lower slopes of the mountains are composed of many varieties of shrubs, principally the dwarf birch, or "buckbrush," a dull green in summer but flaming scarlet and orange at the touch of frost.

Among the spruces near Savage River grow blue lupine and several louseworts. In the sunny openings of wood and thicket will be found members of the sunflower family. Many little lilac asters come up in sandy places, and starry chickweeds are common everywhere. As the summer advances, the large-flowered blue larkspur and the monkshood thrust their showy flower clusters above the thicket growth. Near the park entrance and at most lower altitudes the fireweed covers all otherwise unoccupied space with its sheet of bright pink flowers.

CLIMATE: The climate of the park differs on the two sides of the Alaska Range. On the inland side of the mountains there are short, comparatively warm summers and long, cold winters, with a low precipitation. The area draining into the Pacific has a more equable climate; the summers are longer and cooler and the winters warmer than in the Interior, with much greater precipitation.

The average snowfall in winter varies from 30 to 35 inches during the whole of the season, while in the summer the total precipitation never amounts to more than 15 inches. Temperatures range from 60° to 80° in the summer, and in the winter, although at times the thermometer runs down to 45° and 50° below zero, it usually averages about 5° to 10° below.

The sunshine during the summer is gorgeous and lasts for more than eighteen hours a day. On June 21, the longest day in the year, the sun is visible at midnight from the top of mountains approximately 4,000 feet in height, and photographs may be taken at that time.

GLACIERS: All of the largest northward-flowing glaciers of the Alaska Range rise on the slopes of Mt. McKinley and Mt. Foraker. Of these the largest are the Herron, having its source in the neve fields of Mt. Foraker; the Peters, which encircles the northwest end of Mt. McKinley; and the Muldrow, whose front is about 15 miles northeast of Mt. McKinley and whose source is in the unsurveyed heart of the range. The fronts of all these glaciers for a distance of one-fourth to one-half a mile are deeply buried in rock debris.

Along the crest line there are many smaller glaciers, including some of the hanging type. Both slopes of Mt. McKinley and Mt. Foraker are ice covered.

The greatest glaciers of the Alaska Range are on its southern slope, which is exposed to the moisture-laden winds of the Pacific. The largest of the Pacific slope glaciers, however, lie in the basin of the Yentna and Chulitna rivers. These have their source high up in the loftiest parts of the range and extend south far beyond the boundaries of the park.

The glaciers all appear to be retreating rapidly, but, so far, little direct proof has been obtained of the rate of recession. According to a rough estimate of geologists studying the area, the average annual recession of the Muldrow Glacier may be about one-tenth of a mile.

On the inland front but little morainic material is left along the old tracks of the glaciers, and it appears that most of the frontal debris is removed by the streams as fast as it is laid down. Such a process would be accelerated in this northern latitude by the freshets that accompany the spring breakup. The glaciers as a rule are not badly crevassed and many of them afford, beyond the frontal lobes, excellent routes of travel.

Most of the valleys are lowlands of the region and, during the Pleistocene period, were filled with glacial ice. This ice also overrode some of the lower foothills, while in the high regions were the extensive neve fields which fed the ice streams.

Leaving Mt. McKinley National Park, the railroad passes through narrow, twisting Nenana Canyon, close to the swift Nenana River, dives under three tunnels, and arrives at HEALY 358.1 m. (p.o., 1,368 alt., 14 pop.), where a half-hour stop is made for lunch. Large black coal seams are plainly visible in the hillside, and a four-mile branch line runs to the Healy River lignite coal mines on the opposite side of the valley. SUNTRANA (61 pop.) is a few miles east of the railroad, above Healy. Nenana River 370.7 m. is crossed on a steel bridge 488 feet long. From FERRY 371.2 m. (1,006 alt.), a road leads to the Bonnifield placer and gold quartz region.

NENANA 411.7 m. (p.o., 362 alt., 291 pop.) is a village on the south bank of the Tanana River at its confluence with the Nenana, and was an Indian village in 1902. The town as it exists today was built in 1916 as a base for railroad construction in the northern division.

Perhaps no institution is so typically Alaskan as the yearly Nenana ice sweepstakes. Each year thousands of Alaskans attempt to guess the day, hour, and minute of the breakup of the ice on the Nenana River, wagering one or more one-dollar-sweepstake tickets on the outcome. Every conceivable method of fixing the date in advance is used—exact science, astrology, numerology, and just plain guessing. One year a group of engineers in the Fairbanks district took daily ice measurements in many rivers and small streams of the vicinity, averaged the temperatures, the melting of the ice, and the depth of the streams. Applying their findings to the depth and width of the Nenana, they devised a mathematical formula, then formed a pool of $1,000, each dollar representing a guess. Their thousand guesses were all four days wrong. More accurate was the Anchorage resident who by astrology figured that the ice would break up in 1937 on May 11. Since the stars failed to inform him as to the exact hour the ice would move, he covered every minute of May 11 at one dollar the minute, betting $1,440. The ice broke up on May 12, and Merwin Anderson, Fairbanks bus driver, won $70,000 on a one dollar bet. One old-timer, remembering that drunkards are proverbially lucky, roused a man intoxicated to the point of unconsciousness and asked him to name a date. The drunkard obliged with "August 24."

The exact moment of the breakup is determined by an elaborate system in which wires, attached to a bell and clock on shore, are run out into the river and frozen into the ice. Accurate data have been kept since 1917. The ice has broken four times on May 11 and three times on April 30. On the occasion of the earliest breakup the date corresponded with the year—April 26, 1926. Up to 1939 the latest breakup was on May 15, 1935.

For the benefit of visitors who wish to try their luck, below are listed the dates when the ice broke up for 23 years:

1917—April 30	11:30 A.M.
1918—May 11	9:33 A.M.
1919—May 3	2:33 P.M.
1920—May 11	10:46 A.M.
1921—May 11	6:42 A.M.
1922—May 12	1:20 P.M.
1923—May 9	2:00 P.M.
1924—May 11	3:10 P.M.
1925—May 7	6:32 P.M.

1926—April 26	4:03 P.M.
1927—May 13	5:42 A.M.
1928—May 6	4:25 P.M.
1929—May 5	3:41 P.M.
1930—May 8	7:03 P.M.
1931—May 10	9:23 A.M.
1932—May 1	10:15 A.M.
1933—May 8	7:30 P.M.
1934—April 30	2:07 P.M.
1935—May 15	1:32 P.M.
1936—April 30	12:58 P.M.
1937—May 12	8:04 P.M.
1938—May 6	8:14 P.M.
1939—April 29	1:26 P.M.

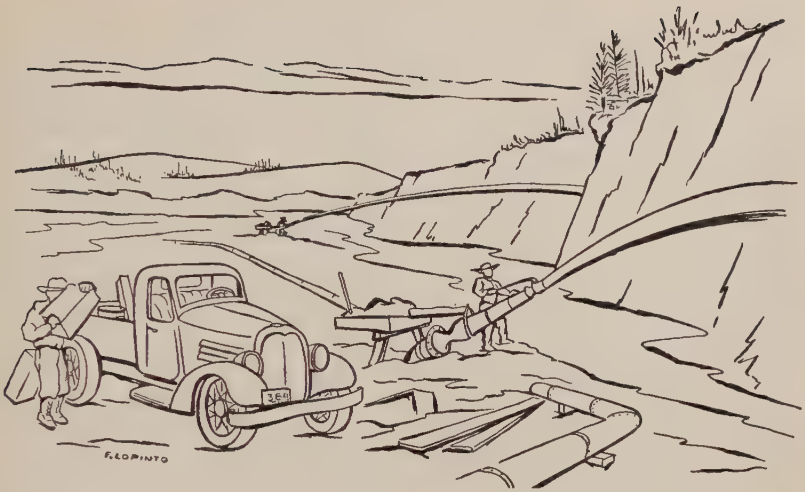
At Nenana the train connects with freight and passenger steamers operated up and down the Yukon. Nenana is the distributing point for a considerable portion of central Alaska bordering on the Tanana and Yukon rivers, including the Iditarod, Innoko, Hot Springs, Ruby, and Marshall gold-mining districts. In the fall the steamers are dragged up on the ways, repaired, and stored during the winter by the Marine Ways, maintained by the railroad.

In 1923 the Alaska Railroad inaugurated weekly freight and passenger service between Nenana and Holy Cross, a one-way distance of 723 miles. In 1933 obsolete steamers were replaced by the *Nenana,* a wooden stern-wheel paddle vessel with 600 horsepower, horizontal condensing engine and twenty-three two-berth staterooms, 237 feet long, drawing only 3½ feet when fully loaded. The *Nenana* is supplemented by the *Alice,* a smaller vessel with six staterooms and twenty-one berths, and covered freight barges. During the season of river navigation (May 15 to Oct. 1) these vessels ply between Nenana and Marshall, 858 miles, where connection is made with boats plying lower Yukon River points to St. Michael. At Koyukuk connection is made with boats operating on the Koyukuk River. The White Pass and Yukon Railway operates steamers upstream on the Yukon from Nenana to Whitehorse, Y.T. (See Part II, 2).

The railroad crosses the Tanana River on a 700-foot steel bridge, one of the largest of its kind in the world, at 413.7m. At the south end of the bridge is an Indian mission. At the north end of the bridge President Harding drove the golden spike that marked the completion of the railroad on July 15, 1923. On the north bank of the Tanana, just below the bridge, several Indian fish wheels revolve with the force of the current and scoop out fish used by the Indians for food.

From Dunbar 431.6m. (368alt.), trails lead to the Livengood and Tolovana gold-mining districts, 65 miles north. From Happy 460.8m. (609alt.) a narrow-gauge railroad formerly extended for 39 miles, serving the Fox, Gilmore, Olnes, Eldorado, and Chatanika gold districts, but was abandoned upon the completion of automobile roads. The discovery of gold in these districts resulted in the great Fairbanks rush of 1903-4. The Ester Dome gold-quartz district is on the right.

University Farm 466m. (437alt.) is an agricultural experiment station conducted by the University of Alaska, itself located at College 467.1m. (p.o., 436alt., 61pop. chiefly faculty), Fairbanks 470.5m. (p.o., 2,101pop.), once simply a mining camp but today one of the metropolises of Alaska, is the focal point of a great gold mining, agricultural, and wild-life district. (For College, Fairbanks, and the Steese and Elliott highways see Part II, 6.)



6. THE GOLDEN HEART

FAIRBANKS—CHENA HOT SPRINGS—UPPER KOYUKUK—COLLEGE—LIVENGOOD—CIRCLE.

FAIRBANKS AND VICINITY

FAIRBANKS (p.o., 448 alt., 2,101 pop.), the "golden heart" of Alaska, is the metropolis of the Interior. This former mining camp on a bend of the Chena River is the northern terminus of the Alaska Railroad and the Richardson Highway, the southwestern terminus of Steese Highway, and a focal point on world air routes. It has been compared in location and importance with the early Westport Landing, that later became Kansas City. Like early Kansas City, here certain types of transportation end, and other and more primitive types begin for farther-faring pioneers. Like Kansas City, it is located almost exactly in the geographical center of the country and has a financial and commercial importance far beyond the actual size of its population. Its more modest houses are one-story cabins of peeled logs set in a frame of flowers and heated with wood-burning stoves; its more pretentious dwellings are neat frame structures with cement foundations, garages, bathrooms and furnaces, bordered by new sidewalks—cement on the main streets, plank on the outskirts—and alongside the walks are running waterpipes linked with steampipes to keep them from freezing in winter. The business district, along First and Second avenues, is lined with hotels, cafés, stores, Finnish bathhouses, transportation agencies, prospecting outfitters. And its streets are crowded with prospectors, mining engineers, government officials, an occasional farmer, a few Indians, bus drivers, plane pilots, teachers from the university—and, in the summer season, tourists.

Perhaps nowhere else in the whole Territory of Alaska is the contrast between summer and winter so marked as in this bustling city, 120 miles south of the Arctic Circle. During the long summer days, when the temperature frequently rises to 90° in the shade and the nights are brief intervals of twilight between sunset and dawn, a kind of fever seizes the citizens of Fairbanks. With only one hundred days to wrest gold from placer or drift, to raise cabbages, potatoes and hay in the fields, and tomatoes and green vegetables in the greenhouses, to make new strikes or to develop old ones, to supply the vast expanse of the Interior with transportation, household goods, mining equipment, and technical direction, everybody works most of the daylight hours. Stages, trucks, and private automobiles come and go south to the copper country and the coast region around Valdez, east to the gold districts from Cleary to Circle. Trains and motorcars arrive on the Alaska Railroad from Anchorage, Seward, and Matanuska Valley; silver Lockheed Electras arrive from Juneau to the southeast and depart for Nome to the northwest; small red or yellow freight or passenger Stinsons and Bellancas dip and soar on their way to or from Wiseman, north of the Arctic Circle, Goodnews, Bristol Bay, the Alaska Peninsula, and the Kuskokwim. The revolving oven of the North Pole bakery ships loaves of bread by train, plane and auto as far as Bethel on the lower Kuskokwim. In the lobby of the three-story, 120-room Nordale Hotel miners and prospectors from all over Alaska, the States, South America, Canada, and Russia sit on modernistic chromium chairs and swap experiences from the world around. The only residents of Fairbanks unaffected by the summer fever of activity are the guests from remote sections of the Interior languishing in the "skookum house"—the Fairbanks jail.

As winter comes on and the nights grow longer, the air becomes breathlessly still and the thermometer drops to the bottom of the tube. The light snow remains poised on telephone lines and bare branches of trees in motionless bands inches high, unshaken by a breath of wind. Deep tracks are worn to woodpiles outside the door, the stove glows red in the early afternoon twilight, and under the lamp grown men pore over treatises on mining and agriculture to make a passing mark in their courses at the University of Alaska. Fifty-inch logs crackle in the fireplace in the lobby of the Nordale Hotel, and the North Pole bakery freezes thousands of loaves of bread that six weeks later in remote outlying camps, after thawing in the oven, will be as fresh as when baked. Kerosene freezes thick and white, and dogs learn to turn aside when patted to avoid the tingle of a spark of static electricity jumping from the human hand to their noses. Every third day Harold Gillam takes off from the airport and soars to 18,500 feet to make tests for the Weather Bureau. Mail, freight, and passengers still come in over the Alaska Railroad, planes arrive daily, but the sharp, cold quiet deadens all things, throws the mind in upon itself—until there comes a rush of water in the Chena, when the ice breaks, and a rush of blood to the head, and spring begins.

Although the fifteenth census gives Fairbanks only slightly more than 2,000 population, its total population in 1939 was probably above 4,000; and the population of the area it serves—roughly equivalent to a great circle with a radius of 100 miles—is much greater. The social, cultural, and commercial facilities of the town are equivalent to those of a much larger city in the States, and include telephone, telegraph, electricity, a radio station, a hospital, a chamber of commerce, a junior chamber, several churches, many clubs, and several labor unions. Over 400 children attend school in a three-story fireproof building, equipped with laboratory, gymnasium, shop, and home economics department in addition to the customary classrooms. The Fairbanks High School is a member of the Northwest Association of Secondary and Higher Schools, and approximately seventy percent of the graduates attend higher institutions. The Thomas Memorial Public Library is housed in a building especially erected for the purpose on First Avenue and Cowles Street, set in a frame of flowers, with a paid librarian in charge. There is a well-equipped fire department that must battle against low water pressure during extremely cold weather, and, since there is no town reservoir, must pump water from wells, thence through hydrants to the fire. The town established its first regular fire department in 1906, after a disastrous fire that, starting above the Eagle saloon at the corner of First Avenue and

Cushman Street, spread and destroyed three square blocks in the business district. The imposing concrete and steel Federal building at Second Avenue and Cushman Street houses the post office, court house, and a number of Federal agencies. Other building construction undertaken in 1938 was valued at more than $1,000,000. Lathrop Block, a half-million dollar, five story concrete building, houses the Fairbanks *News Miner* (daily, 10 cents), a newspaper with an exceedingly up-to-date plant, capable of turning out not only ordinary commercial printing but pamphlets and even full-sized books. Station KFAR broadcasts from the top floor of this building.

The history of Fairbanks began with the discovery of gold by Felix Pedro in 1902. Pedro, who is also credited with the discovery of Cleary and Goldstream, two of the greatest gold-producing creeks of the Fairbanks area, started prospecting in the spring of 1898 from Chicken Creek in the Fortymile district with a partner named Kinney and worked his way down the Tanana, thence up the headwaters of the Charley and Goodpaster rivers, living off the country. Returning to the Fortymile district, Pedro secured a grubstake from John Martin and R. O. Rothenburg. Floating down the Yukon until frozen in, Pedro spent the winter of 1898-9 on an island cutting wood for the steamboat line. Early in the summer of 1899 Pedro arrived in Circle, outfitted again, and headed over the mountains to the Chatanika River, thence to Cleary Creek. Finally, in September, 1902, he struck gold on what is now Pedro Creek. He is not known to have taken out much dust, and a few years later went Outside and died. "On September 8," records Herb E. Willson, a pioneer in the district, "a meeting of the early stampeders was held on newly discovered Pedro Creek, and there we appointed a recorder and named the place Fairbanks, after the vice-president."

News of the strike spread rapidly, but gold rushers were disappointed, as the gold-laden bedrock was buried under 80 to 100 feet of muck and gravel. Since this meant the use of expensive equipment and largescale operation, Fairbanks during its gold rush never seriously suffered from the kind of mushroom development that almost wrecked Dawson and Nome. Fairbanks has its gaudy memories, but these survive only in the reminiscences of a few old-timers or in the twinkling eye of an otherwise sedate matron of Fairbanks society.

Drift mining, or deep placer mining as it is sometimes called, was the method commonly employed in this district. First a shaft was sunk to bedrock—a weary, arduous task—and the gravel and sand panned for "colors." If there were none, it meant weeks of toil wasted, but on the miners went, ever hopeful that at the "next hole" they would strike pay dirt. "Next hole" was a common phrase in the prospector's vocabulary.

If the gravel contained gold, tunnels were driven along the pay streaks. The gold-speckled dirt was hoisted up the shaft in buckets. During the winter it was piled in "dumps" to be washed in the spring, but during the open season it was run through the sluice boxes as it came from the shaft. The gold that gathered in the riffles in the bottom of the boxes was "cleaned-up" every so often.

It is a far cry from the crude, primitive methods of placer mining in the rush days to the efficient, up-to-date, gold-saving devices now employed. In the days of rich, shallow diggings, men could be seen gleaning gold from the gravel simply by panning. Even more customary, especially on the Nome beach, was the use of rockers and long toms. The rocker consisted of a dozen or more small riffles attached to a canvas-covered, sloping bottom. Occasionally an amalgam plate was added to improve recovery. A long tom was an improved rocker and was used in place of a sluice box where running water was not available. These methods were soon succeeded by the sluice box, the simplest type of continuous concentrator. There were sluice boxes and sluice boxes—some large, some small, some crude, some carefully fashioned. Generally they were rectangular flumes of wood, having various types of riffles laid along and across their bottoms.

In the Fairbanks district, where drift mining was common and tailing spaces scarce, long flumes of sluice boxes were built and elevated 20 or 30 feet in the air, and the gravel hoisted into them.

The early miner had two alternatives in working shallow, low-grade ground: hydraulicking, and using mechanical excavators, such as derricks, draglines, steam shovels; or Bagley scrapers. Dredging, which came later, required both a large investment, and a thorough knowledge of the value of the ground, and for most miners was out of the question. The use of mechanical excavators also required considerable capital. Hydraulicking alone was within the reach of the miner of modest means, but this method was dependent upon an ample supply of water.

In each method the problem of thawing frozen ground was a vital one. At first, the very primitive system of building wood fires against the face of the opening was employed. Miners soon improved upon this process by improvising steam points out of old rifle barrels, driving them into the frozen gravel, and forcing in steam. Later, manufactured steam points were brought into the country. These methods were both difficult and expensive and led eventually to the perfection of the cold-water thawing system. The frozen condition of the ground, which was such a problem to the miners using these methods, was extremely advantageous to the drift miner as it eliminated the necessity of timbering and pumping.

Toward the close of the second decade following the discovery of gold, mining operations in the Interior reached a dormant period. The cream of the bench placers had been taken, drift miners struck barren creeks and became discouraged, rich creeks had become exhausted of high-grade dirt, and small-scale miners could not afford to work the low grade properties. The old-timers were reminiscing about "that strike up the Koyukuk," or the "good old Klondike days." They were reliving the old days and trails—not blazing new ones.

Then came the government railroad and capital. Eastern interests were sending their engineers and geologists to determine the feasibility of large-scale mining operations. The Fairbanks Exploration Company, a subsidiary of the United States Smelting, Refining and Mining Company, began to prospect near Fairbanks in 1924 and acquired practically all the claims on Cleary and Goldstream creeks.

Until the completion of the government railroad in 1923, the Fairbanks district had to rely on boat or stage transportation—each as expensive as it was slow—so that dredging of the worked-out areas was economically impossible. For years, the life of Fairbanks had been slowly but surely ebbing. The coming of the railroad was like an elixir of youth. Not only did the building of the road bring employment and good salaries to many in the district, but it meant that now large-scale gold production was practicable.

Before the last rail had been laid, several large companies had started development plans. In 1938 there were eight monster dredges in the Fairbanks district: six owned by the Fairbanks Exploration Company and two by the Fairbanks Gold-Dredging Company. There were four in the near-by Circle district: one at Coal Creek and one at Woodchopper, owned by the General McRae interests; one owned by the Deadwood Mining Company; and one, by the Berry interests.

With the coming of capital, the cruder methods of gold mining gave place to mass production and modern mining methods. There was a transition from individual endeavor to company operation. The colorful, adventuresome prospector is not seen so often—in his stead are high-salaried business executives. Rocky, swampy roads were replaced by miles of smooth highways. Automobiles, trains, and even airplanes replaced the rickety wagons, stagecoaches, and dog teams. Of course, some remnants of the "old days" remained, but the general trend was toward highly efficient, large-scale production. In many sections near Fairbanks, the rich pay was worked out years ago and it is only through mass production that the mining of what is left can be profitable.

The Fairbanks mining area is approximately 30 miles wide and 50 miles long, and since the first discovery in 1902, its gold-bearing streams have yielded more than one hundred million dollars. And they are still giving up their treasure.

An important factor in gold-mining operations near Fairbanks is the increasing use of the airplane. It would otherwise be impossible to operate certain mines located so far from rail or water transportation that they were formerly accessible only in winter, and then only by dog team. A party of prospectors would exhaust the entire grubstake simply in reaching their destination. The prospector or miner today can step into an airplane and be landed with his equipment at his destination in a few hours' time. The pilot can bring him additional supplies at arranged intervals. The miner can then expend all his time and effort during the working season on mining. The happy ending comes when, after months of labor, he hands the pilot a poke of gold dust to take to the bank.

Bringing supplies to the miner is a dramatic event. Soaring above the tundra, the pilot circles a cabin far below. A dark object against the ground waves its arms, the plane circles, tilts a wing, drops lower, and levels out. A package goes over the side, the silken folds of a parachute slowly fill, and the supplies drop slowly to earth—bags of flour, beans, bread, 50-pound parcels of dynamite, and the all-important mail.

Gold mining is, of course, the principal industry of the Fairbanks district, and the Fairbanks precinct of the Fourth Judicial Division produces more gold annually than all the other precincts combined. Another important industry, one day to become a major one, is lumbering and logging. Engelmann's spruce predominates in the region, and its natural location in river valleys and flats affords cheap transportation to the mills at Fairbanks. The logs average about twenty inches in diameter and usually run about 10,000 feet to the acre. The logging is done by horses or tractors during winter temperatures as low as fifty below zero.

Today the available timber is situated away from the banks of the streams and must be cut and yarded along the river banks to be rolled into the river when the spring freshets come after the ice has gone out. Then begins the hazardous and risky task of driving the logs to the mill at Fairbanks, nearly 175 miles distant, through tortuous sloughs and meandering rivers full of snags, drift piles, and treacherous bars.

The average drive takes from six to eight weeks to bring the entire cut to the mill. During 1912, when there was an enormous demand for lumber for mining and building, large drives of several million feet of timber were attempted, but, because of the swift and treacherous currents of the Tanana River and inadequate equipment, nearly two million feet of logs were lost. Now, however, the drives are made in smaller quantities, closely watched by the drivers in poling boats, while powerful motor launches are used to place adequate shear booms in strategic places.

The loggers get very little rest during the drive, eating when they can, usually wet to the skin, and on the constant lookout for log jams. During the course of a drive several hundred pounds of dynamite are used to clear away the jams that occur.

The method of driving is peculiar to this country, and only through years of practice can successful drives be satisfactorily carried out. Experience is needed to know the proper time for launching so that the high waters will take the logs over bars which would be impossible during low water.

Nearly all the timber used in and around Fairbanks comes from the Salcha and Chena river regions, to be cut into lumber and shipped to points on the Alaska Railroad, down the Yukon River on boats, and flown by plane into inaccessible mining properties far into the Interior. Each year sees an increasing demand for building material, and the entire log drives are converted into lumber for use in building. Years ago the spruce timber cut in the Tanana Valley supplied all the wants of the building trade, but, because of the increasing demand, nearly fifty percent of the lumber used in this area in 1937 was shipped in. Crews are on the alert constantly for new stands of timber, and airplane trips are often made to cruise timber and determine the best methods of logging it.

Rapidly approaching a major industry is the lodging and entertaining of tourists who arrive by the Yukon River from Whitehorse, on the Alaska Railroad, or over the Richardson Highway. The number coming to Fairbanks increases each season—in the summer of 1937, between 1200 and 1300 tourists visited the town.

Fairbanks is the main center of a trading zone of 227,000 miles. No city in the United States, its territories, or insular possessions has so vast a tributary area. Freight and supplies arriving by railroad or highway are transported farther into the Interior by Fairbanks' twelve hundred autos and trucks over a highway system totaling 1200 miles, or directly through the air by plane.

More than thirty planes operate continuously from the local airport, which is situated exactly on the only all-land route between the Occident and the Orient. Fairbanks citizens are becoming accustomed to having travelers drop in to refuel on their way round the world. The Howard Hughes flight of 1938 is the most recent instance. A proposed $10,000,000 army air base at Fairbanks might, if established, make the town a center for 2,000 planes and add 2,500 to its population.

With its extremes of climate, ranging from as low as 60° below zero in winter to as high as 100° above in summer, agriculture is more difficult than in Matanuska Valley. Grain, hay, and hardy vegetables are raised on a soil permanently frozen at a depth of two feet, and table vegetables are grown in the scores of private hothouses in the town. A cucumber raised in Fairbanks in 1937 measured twenty-three inches from tip to tip and eight inches in circumference. Flowers and shrubs grow in profusion, and the chamber of commerce offers prizes to owners of the finest gardens of various types. Most common is the old-fashioned flower garden, full of pansies, nasturtiums, snapdragons, sweet peas, poppies, petunias, zinnias and asters. T. M. Hunt of Fairbanks, the only Alaska member of the American Rose Association, has found twelve varieties of roses suited to the locality. Six varieties of lilies grow here, including Siberian coral, Tiger, and Nodding, and some six varieties of iris, from dwarf yellow to tall purple. Peonies are winter hardy, but summer rains spoil the bloom. The spring bulbs, such as daffodils and tulips, will winter in the ground and produce late spring moves. Hardy shrubs tested by Mr. Hunt are the lilac, the asp-leaved spiraea, the Tartarian honeysuckle, the cottonaster, the Amur tamarisk, the Siberian dogwood, and the daphne—with these flowering shrubs a continuous circle of blooms may be had from the spring breakup to fall frost. Small fruit trees, such as chokecherry and service berry, imported from Canada and the northern states, grow well, as of course do such local shrubs and trees as birch, spruce, tamarack, highbrush cranberries, and juniper.

An important annual event is the midnight ball game played every year on June 21. On this day also, visitors may see the midnight sun by making a special flight in a plane high enough over the city to see past the Arctic Circle. At Tanana Valley Fair, held during the first few days of September, stock and agricultural products from the whole region are exhibited and prizes given during the day, and in the evening there are movies, "addresses by prominent speakers," and "jitney dancing." The all Alaska Ice Carnival and Dog Derby is held annually during four days in March, when dog mushers with their huskies, hockey and basketball teams, skiers, skaters, burlers, beauty queens, and visitors from all over the Interior and Yukon Territory gather to compete for honors and to enjoy parades, fireworks, pageants, parties, and dances.

Fifty miles by air northwest of Fairbanks is CHENA HOT SPRINGS, on Monument Creek, a tributary of the Chena River. This resort, in the heart of charming scenery and excellent hunting and fishing grounds, has eight cabins and a roadhouse, with facilities for taking care of thirty visitors. A hotel and cottages are to be erected, as well as heated greenhouses, outside gardens, and a large pavilion. The principal characteristic of the water is its content of sulphate, chloride, and bicarbonate of sodium. In general character it is somewhat like the Felsenquelle, one of the famous springs at Karlsbad, Bohemia. Moose, caribou, and bear are abundant, and near-by streams are full of grayling. The resort may be reached only by plane in summer (consult local airlines) and by dog team in winter; but in time an auto highway will be constructed direct from Fairbanks.

One hundred and ninety-five miles north of Fairbanks is the town of WISEMAN (p.o., 80pop. est. 1938) accessible in summer by plane only, about 70 miles northeast of BETTLES (23pop.). (For the Chandalar district see Part II, 2.) ALLAKAKET (p.o.) is 30 miles southwest of Bettles on the Koyukuk River, and has a mission for Natives. These settlements, well within the Arctic Circle, lie in the Upper Koyukuk district, a pioneer gold field still awaiting new methods. Here miners work with the hand windlass, boiler and hoist, as they did a generation ago in other parts of Alaska. For the sheer joy of finding gold, perhaps no district has more lure, as much of the gold is very coarse. Nuggets weighing as much as sixty or seventy ounces are frequently found above Twelvemile Creek, and the fine gold is "shotty" and heavy. Further down river the gold is fine and flaky with some "flour". Even with primitive methods, fortunes have been taken from this district. The "big money" has been pretty well mined out, but if anyone would like to try his luck at prospecting, here is the place to do it.

The most important item in a prospector's outfit is a good pair of well-nailed boots. They may be low or high, but should not be over twelve inches. A boot eighteen inches high tends to bind the muscles of the leg; it is stiff and also costly. The next item is a good sleeping bag or wool blankets. A man may endure exposure and hardship provided he can get rest and sleep. For summer weather a good nine-pound eiderdown or kapok sleeping bag or a pair of double blankets weighing eight to ten pounds, with a light shower-proof, sail-silk or canvas cover, will be sufficient in nearly any place in Alaska. For winter use, a sixteen-pound eiderdown or two pairs of double blankets are required.

For a tent, anything from a seven by nine light-weight canvas sheet to a good tent of sufficient size to accommodate the prospector and his partner will do, depending on the season, country, and means of transportation. If only a fly is carried, it is well to take along a small mosquito tent.

An ax should be of good quality and weight, and a single-bitted one is the most serviceable type. A small axstone and file are essential. A rifle is useful when game is in season or when a man is far from civilization and must depend on the country for part of his food. A fishing line and some hooks and flies take up little space and are most useful.

Some sort of geologist's hammer, pick, or mattock must be carried. A light-weight mattock or prospector's pick on a long handle are good types.

Either a packsack or packboard is essential unless horses are to be used solely. A pack can be made out of a pair of overalls, but when a man is going to carry a heavy load long distances, a good packsack or pack board is indispensable. The pack board is preferable except in heavy brush or steep country, where the packsack has the advantage.

For cooking utensils those made of either tin or aluminum are the best except for cups, which should be made of enamelware. Provision bags are inexpensive and handy. Large bags, capable of holding sacks of flour and sugar, made of paraffined canvas, are worth the cost, while small bags holding two to ten pounds keep provisions clean and intact.

Some bandages, a bottle of iodine, and one or two simple medicines, such as tabloid laxatives, should be in every pack.

The simplest method of recovering placer gold is by panning. The gold pan is a circular dish of sheet iron with sloping sides, varying from ten to eighteen inches in diameter, and having a depth of from 2½ to 3 inches. The pan should be light and strong, with smooth inner surfaces kept free from grease and rust. Sometimes gold pans are made of copper, so that the bottom may be coated with mercury to catch the fine gold often otherwise lost.

The pan is filled about two-thirds full with the material to be tested. It is then placed under water, and any clay pieces or hard lumps are broken up with the hands. The pan is now raised until it is just below the surface of the water, and is shaken vigorously from side to side with a slightly circular motion to keep the lighter material in suspension and work it out of the pan, which is slightly tilted away from the operator. The motion keeps the material in agitation, allowing the heavier part to settle while the lighter is washed over the lip of the pan. This is brought about by alternately raising and lowering the lip above and below the surface of the water. The pan should occasionally be lifted from the water and shaken vigorously with the same circular motion, to hasten the concentration without the chance of some of the gold being washed out. The procedure is continued until only the gold and the heaviest material remain. About this stage of the operation it is well to transfer the panning to a tub of water, so that any of the gold that may be washed out can be recovered by panning the contents of the tub.

The final residue is dried, and the magnetite, which always accompanies placer gold, is drawn away with a magnet wrapped in a thin

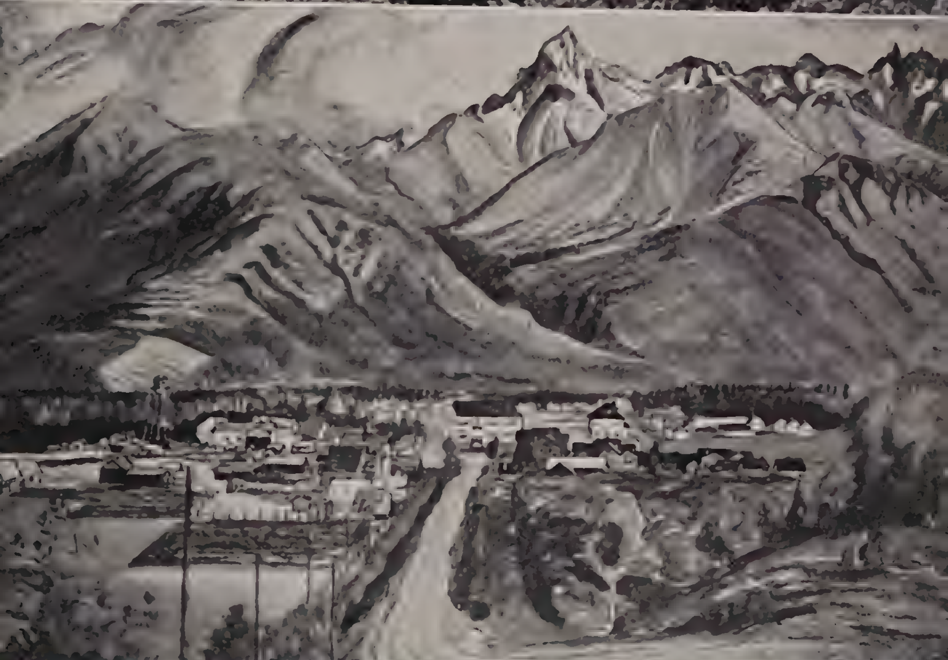
Matanuska

THE colony of Matanuska was founded in May 1935, when 200 families from the drought-desolated Northwest were transported by the Federal Emergency Relief Administration to virgin forest near Palmer on the Alaska Railroad.

Two years later, what had been a wilderness was a lusty, distinctively American farming community. What at first had been a tent village was a settlement of 170 well built, good-looking frame and log houses of six, seven, and eight rooms. Inevitable misfits had been eliminated, and one hundred babies had been born.

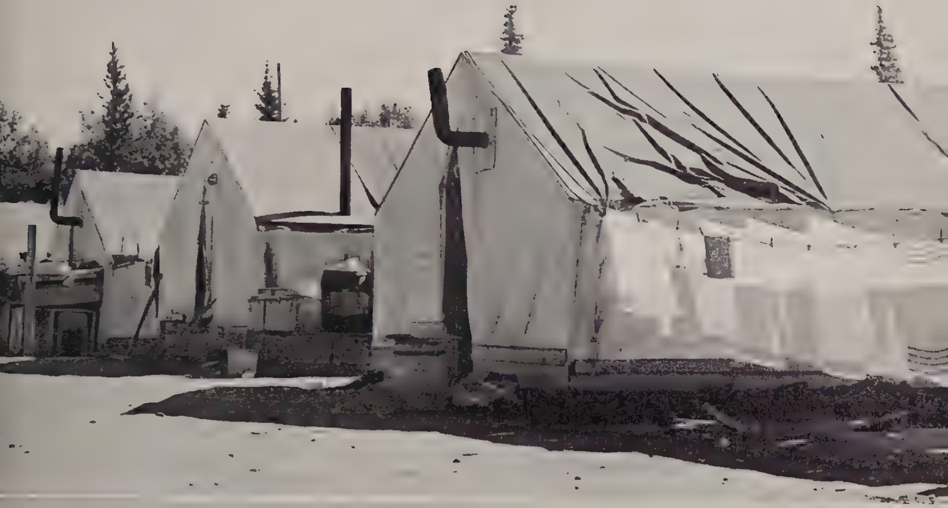
In 1936 homes had been built for all, and contracts were prepared by which colonists were able to purchase their houses and other real property on low payments over a period of thirty years, each colonist being allowed forty acres of farm land, less five of standing timber. A cooperative marketing association had come into existence. In its first six months the Association earned $51,000 and paid a dividend of 3½ percent, an astonishing profit in view of the fact that the virgin loam was still "sour," and that the land under cultivation averaged seven and a half acres for each colonist.

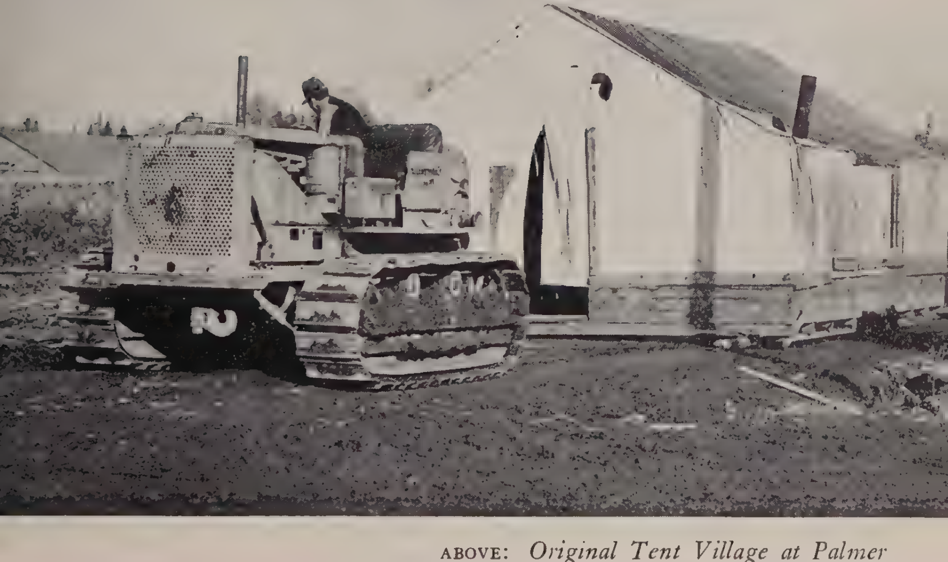
Under scientific management the soil's productivity should increase year by year. It is hoped that in time the colony will be able to supply the million-dollar demand for dairy and garden products lying at its very door along the Alaska Railroad.



ABOVE: *Aerial View of Palmer*
BELOW: *"Matanuska Valley" by Merlin Pollock*

ABOVE: *Pioneer Family*
BELOW: *News Photographers Arrive*

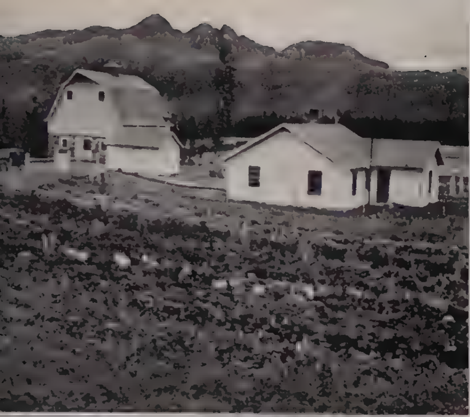


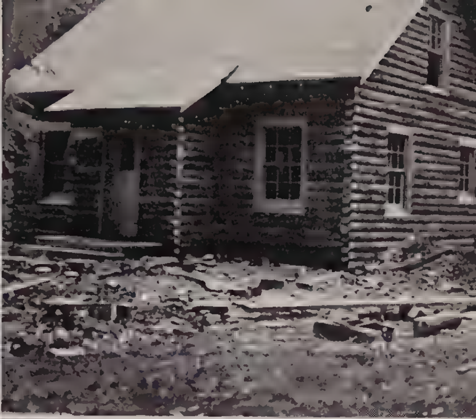


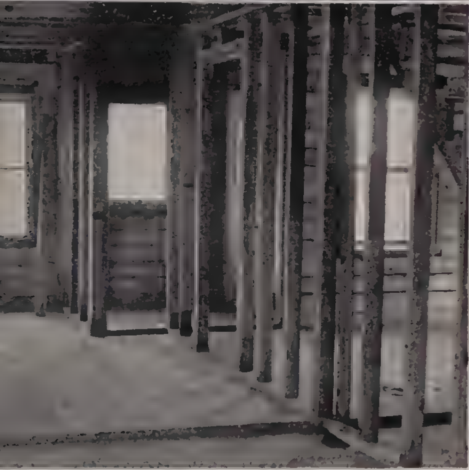
ABOVE: *Original Tent Village at Palmer*
BELOW: *Hauling Tent to Cabin Site*

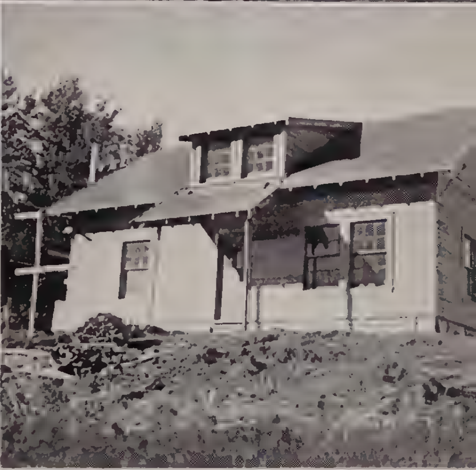
ABOVE: *Arrival of Women and Children*
CENTER: *Peeling Log Cabin*
BELOW: *Harvesting Oats*

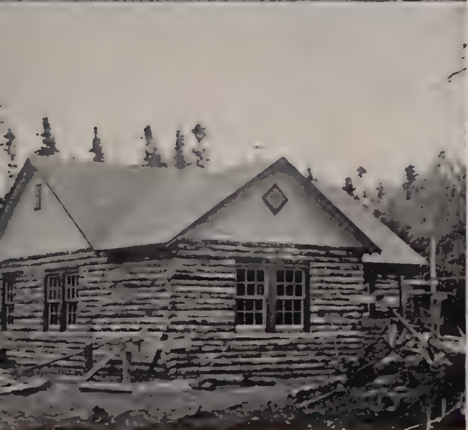
ABOVE: *Splitting Kindling*
CENTER: *A Community Garden*
BELOW: *Drying Hay*

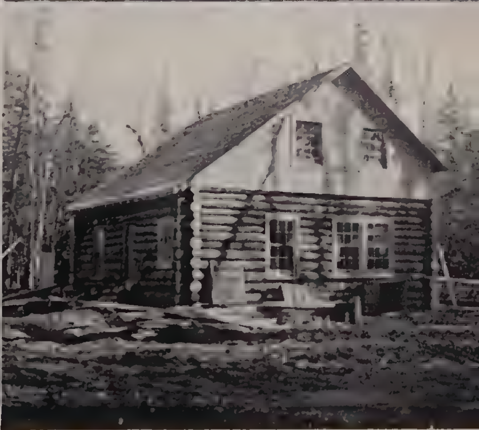










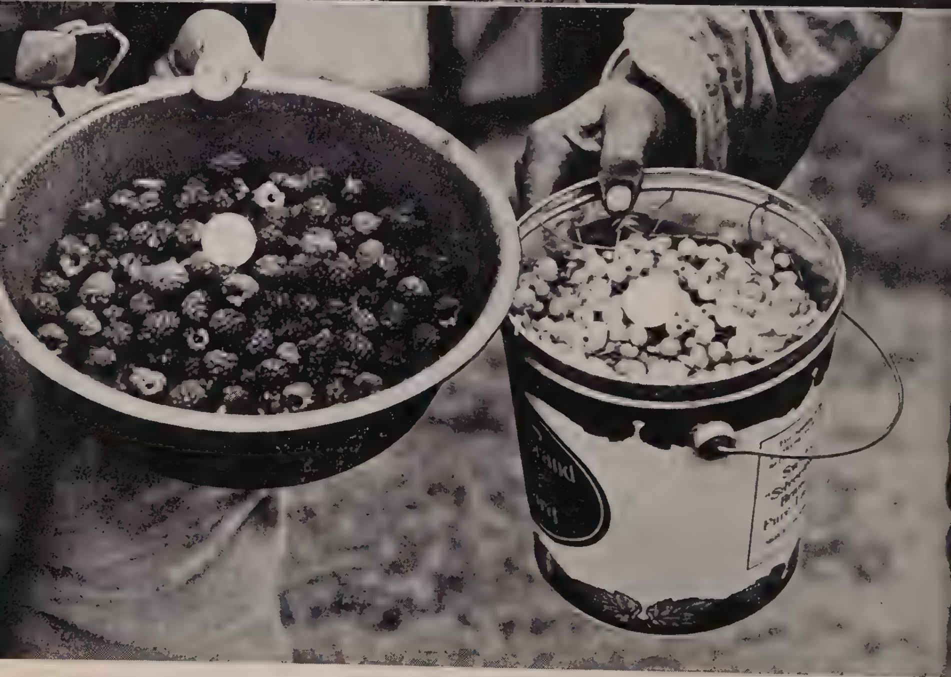


ABOVE: *House and Barn*
CENTER: *Interior of Cabin No. 31*
BELOW: *Log Cabin No. 202*

ABOVE: *Cabin No. 24*
CENTER: *Frame Cottage No. 113*
BELOW: *Log Cabin No. 10*

ABOVE: *Colonist Family in Garden*
BELOW: *Products of Community Garden*

ABOVE: *Bed and Quilt Made at Matanuska*
BELOW: *Woolen Garments Made at Matanuska*



ABOVE: *Cabbages*
BELOW: *Alaska Berries (coins are half-dollars)*

sheet of paper. In this way the magnet may be easily cleaned by drawing it out of the paper. The coarse gold can now be picked out, and the fine gold recovered by the amalgamation process, or by blowing the sand away with a straw. An experienced panner can mine about one-half to three-quarters of a cubic yard of gravel a day.

Most of the mines of the upper Koyukuk are above Bettles, the head of steamboat navigation. Supplies once had to be freighted sixty-four miles by a portage trail and about eighty miles more by water, at a cost of from $140 to $200 a ton. With the increased use of planes to transport freight, transportation costs have been greatly lessened. There are some thirty-nine open-cut mines, fifteen operated with shaft and drift methods. Not more than four men are ever engaged in working a single mine, and generally only two men work as partners. There is no modern machinery in the district.

In this unspoiled region of Alaska live full-blood Eskimos who are on excellent terms of social equality with the white miners. In 1929 Robert Marshall, of the United States Forest Service, explored the Koyukuk, particularly its north fork. He spent a season in Wiseman, and out of his experiences wrote *Arctic Village,* a delightful description of daily life in a remote district of Alaska.

FAIRBANKS TO CIRCLE BY THE STEESE HIGHWAY

The 162 miles from Fairbanks to Circle along the Steese Highway are made by motor coach in something less than a day (for departures, consult stage office, near Nordale Hotel). If the coach is missed, rides may often be caught on trucks and private automobiles. Planes make frequent trips to Circle Hot Springs.

Mile posts mark the highway at frequent intervals. Gasoline and oil may be purchased at roadhouses marked thus (*).

On the outskirts of Fairbanks a road branches off from the Steese Highway to College; a short distance beyond Fox, the Elliott Highway branches off to Livengood; at Central Roadhouse, a road branches off to Circle Hot Springs—all described in this chapter.

The Steese Highway was constructed almost entirely under the direction of Gen. James G. Steese, U.S. Army, president of the Alaska Road Commission, 1920-1927, who rehabilitated the entire Alaska transportation system at the end of the World War. The Steese Highway prolongs the Richardson Highway (see Part II, 5) to the

Yukon River (see Part II, 2), and attains both the northernmost point of the Alaska road system and its highest elevation. Throughout its scenically beautiful length it penetrates some of the most important gold-mining districts of Alaska, where an examination of highly mechanized placer mining is possible at close range.

Leaving Fairbanks, the road crosses the bridge over Chena River on First Avenue at the foot of Cushman Street. On the right is ST. JOSEPH'S HOSPITAL, founded in 1906. This handsome three-story building, containing fifty beds and twenty private rooms, is owned and operated by the Sisters of Charity of Providence, a Catholic organization conducting some of the largest hospitals in northwestern United States and in northern and eastern Canada, as well as numerous schools, homes for the aged, and orphanages. A new wing was added in 1935 at a cost of $100,000. The hospital, which receives funds from a number of fraternal, religious, and non-sectarian sources, is called the "mercy base of the Interior," as it serves an enormous area. On the left is the STATION OF THE ALASKA RAILROAD, before which reposes a locomotive that once ran on the Alaska Home Railroad, a predecessor of the present railroad. On the outskirts of the town are the GENERAL OFFICES AND POWER PLANT OF THE FAIRBANKS EXPLORATION COMPANY.

At 0.5m. a branch road to the left leads to COLLEGE (p.o., 61 pop., mostly faculty), (stage leaves Fairbanks daily), 4 miles distant. This is the seat of the UNIVERSITY OF ALASKA, the farthest north university in America, and one of the sixty-nine land-grant institutions of the United States. Its first land grant was made in 1906, when a reservation near Fairbanks was set aside as a site for an agricultural experiment station. In 1915 Congress made another grant of land as a site for an agricultural college and school of mines, making the whole more than 2,200 acres. The university is located on a slight knoll in the rich agricultural region along the Tanana River. Within easy view, some 120 miles to the southwest, rises Mt. McKinley. A bare hundred miles to the north is the Arctic Circle, beyond which dance the weird flames of the aurora borealis, to the study of which one section of the university has devoted much time and energy. In 1917 the Alaska Territorial Legislature accepted the grant of 1915 and appropriated a sum to construct buildings and purchase necessary equipment. The first unit of what later became the University of Alaska, the Agricultural and Mechanical College, opened in

1922 with six students. From that date, under the guidance of Dr. Charles E. Bunnel, its president, the university has grown to an enrollment of over 200 students, offering courses to both whites and Natives in agriculture, geology, mining engineering and metallurgy, civil engineering, chemistry, home economics, education, business administration, and arts and letters. It is a member of the Northwest Association of Secondary and Higher Schools. The university has published several books, including Wickersham's *Bibliography of Alaskan Literature*. The students publish a college paper, *Farthest North Collegian* (monthly, $1 yearly). The UNIVERSITY MUSEUM (adm. free, apply administration office) contains a number of interesting exhibits relating to Alaska history and pre-history, and has the original printing press on which was printed what is often referred to as Alaska's first newspaper, the *Yukon Press,* first published by Gordon Bettles at Fort Adams on the Yukon on January 1, 1894. The first issue had eight pages, included quotations from Tennyson, Whittier and Oliver Wendell Holmes, excerpts from newspapers of the States, and such items of local interest as this: "It is said that alcohol is an antidote for scurvy. If reports are true there must be a great deal of scurvy at Fortymile this winter." At the time the paper was first published there were only seventeen white men and one white woman residing along the Yukon from St. Michael to Fortymile.

The university maintains two agricultural experiment stations, one at College and one at Matanuska. Many adults in and around Fairbanks during their enforced winter idleness enroll in the university.

The Steese Highway continues past the road to College through a number of farms and scattered fields of wheat and other grains. ENGINEER CREEK 8.2m. (p.o., 870alt.) is the beginning of the placer goldmining region, and piles of rock dug out by miners line the road.

The largest operations are carried on by the Fairbanks Exploration Company, which is removing vast quantities of frozen soil and gravel in its search for gold. It is estimated that from a single one of its mines one-third as much earth is moved in a few seasons as was removed during the construction of the Panama Canal.

Placer gold, a derivative of anciently eroded quartz veins, occurs in the frozen gravels of former stream channels now buried from a few feet to over a hundred feet under frozen gravel, tundra, and muck. The gold, which usually is concentrated at or near bedrock, is in free state, in particles varying in size from mere specks to wheat grains. Occasionally, sizeable nuggets are found.

The first step in the wholesale search for the little yellow flakes is stripping the surface layer of decayed moss and vegetable material by means of jets of water from hydraulic "giants." The removal of this insulating blanket, which varies from 6 to 24 inches in thickness, leaves the underlying frozen muck exposed to the warmth of the atmosphere. The rays of the sun thaw this at the rate of several inches a day. The accumulation of thawed material is removed every day or two by streams of water under heavy pressure—from bank inward and from top downward.

After the muck has been removed by the stripping process, a year or two is spent in thawing the frozen gravel before dredging can commence. The cold-water thawing method used today is the result of many years of research and experimentation. Cold water is pumped through pipes extending from the surface to bedrock and spaced from 16 to 32 feet apart. The distributing pipes are laid in the fall and the driving of thaw points is started in the spring as soon as the temperature of the water reaches 36°, or higher. The points are pieces of three-quarter-inch pipe with a chisel bit, perforated on two sides to allow a flow of water. The water pumped into the ground is led back to the pump after it seeps to the surface and is used over and over again.

In places where there are over 40 feet to bedrock, 1½-inch open-end pipes are set in holes drilled during the winter with electrically-operated Keystone drills. The time required to thaw the gravel varies from 60 to 120 days, depending upon the depth and character of the ground.

Water for stripping and thawing is supplied by the Davidson Ditch, one of the longest ditches of its kind in the world. It carries the water from the headwaters of the Chatanika River, ninety miles across the hills, creeks, and valleys, and its operation requires the service of forty men. A patrol is maintained day and night, for a break in the ditch means suspension of operations until it is repaired.

After two or three seasons of stripping and thawing, the mighty dredges begin their task. The dredge is a combined excavating and concentrating plant and looks like an animated houseboat. An endless chain of mammoth steel buckets—a hundred or more, each weighing more than a ton—digs the gravel and delivers it to the upper end of a revolving screen through which the goldladen gravel passes to tables or riffles. The oversize gravel is discharged onto an inclined belt-conveyor called the "stacker," which carries it to the tailings pile.

The dredge is held in position by a spud at the stern which can be lowered or raised. Digging starts at the surface, the bucket line being moved in a horizontal arc of about 60 degrees by swinging the entire dredge with cables at the bow about the spud at the stern. When the full width has been dug, the bucket line is lowered slightly and another cut is taken across the width of the face. This is continued until bedrock is reached, 12 to 70 feet below the surface. The dredge is then moved forward four to eight feet and digging resumed. Some dredges advance 1,000 feet a season, and some nearly a mile, depending on the width and depth of the cut.

The quicksilver in the riffles quickly gleans the gold and forms amalgam which is cleaned up every ten days or two weeks, taken to the melting room, retorted, melted, sampled, assayed, and shipped to the United States mint, where it is paid for by the government at the current market, which in 1939 was $35 per troy ounce.

Power for the operations is supplied from the Fairbanks Exploration Company's plant at Fairbanks. The plant is equipped with two 1,000-horsepower boilers, three turbo generators of 3,000 kilowatts capacity each, and one of 500 kilowatts. The Healy River mine, the largest coal mine in Alaska, located on the Alaska Railroad 112 miles from Fairbanks, supplies the plant with sub-bituminous coal.

In the narrow valley of GOLDSTREAM 10.5m. (p.o., 750alt.) was one of the most famous placer deposits in Alaska, from which millions of dollars in gold were taken out. Fox 10.7m. (p.o., 800alt.), once an important pioneer mining camp, is now almost abandoned. BERRY (p.o., 75pop. est. 1938), a mining camp on Ester Creek about 10m. northwest of Fairbanks, was named for Clarence Berry, a prosperous miner here in 1904. A half mile from town is hydraulicking against an 150 foot face, where a large number of prehistoric bones are being uncovered. One of the largest draglines in the world is operating here in rich placer deposit.

A short distance beyond Fox on the left is the junction with Elliott Highway (named after Major Malcolm Elliott, who inaugurated its construction) completed in 1936. It leads from Fairbanks to OLNES 20m., a mining and fur-farming center. LIVENGOOD 85m. (p.o., 100pop.

est. 1938) a placer-mining district on Livengood Creek, a tributary of the Tolovana River, is 55 miles from Fairbanks by air. Livengood and other gold creeks in the vicinity are roughly estimated to have produced $7,000,000 by individual operations, and there still remain some $21,000,000 in ground suitable for dredging and dragline operations. Gold at Livengood Creek was discovered in the summer of 1914 by N. R. Hudson and Jay Livengood, both still actively engaged in mining in the camp. Some prospecting of quartz properties has been done in the district.

The Steese Highway continues past the junction with the Elliott Highway to GILMORE 13.8m. (1,000alt., 40pop. est. 1933). Just north is PEDRO CREEK, where the first gold in the Fairbanks district was discovered. The story goes that a hunter in this vicinity shot a moose that had a gold nugget wedged in the cleft of its hoof. The hunter backtracked the trail to the point where the moose had picked up the nugget, and made a strike. MEEHAN (p.o., 60pop.) is 30m. north of Fairbanks on Discovery Creek. The road follows Pedro Creek, climbing rapidly to CLEARY SUMMIT 20.2m. (2,300alt.), from which are visible the Tanana Valley, the Alaska Range, and Mt. McKinley, one hundred and eighty miles distant. Here is SUMMIT ROADHOUSE, serving excellent meals. The wilderness of peaks stretching away on the north almost to the Arctic Circle are for the most part unnamed. At CLEARY CITY 25m. (p.o., 1,000alt., 52pop. est. 1933) on the other side of the summit, a gold dredge is in operation. A few shacks mark what was once a roaring mining camp supporting no less than seventeen saloons. CHATANIKA TOWNSITE 27.5m. (1,000alt.) is a permanent camp of the large company which is dredging the gold-bearing gravels upon which the old town rested. The modern town of CHATANIKA* 29.1m. (p.o., 63pop.) is a center of placer operations. The siphon crossed at 33m. is said to be the longest of its size in the world. Through it the enormous quantity of water needed in dredging operations flows—uphill. CHATANIKA RIVER 38.6m. (860alt.) is part of the Tolovana. LINGO'S ROADHOUSE 41m. (920alt.) is a survival of pioneer days, where excellent meals are served. From 56.6m. (1,480alt.) is visible CASSIAR ROADHOUSE (1,300alt.), on the oposite bank of the Chatanika. The proprietor rows across the river to meet his guests. At FAITH CREEK 69.8m. (1,480alt.) is a roadhouse, an important stop on the winter sled route. Near by is the junction of the three creeks (Faith, Hope, Charity) that form the Chatanika River. Just below the junction is the intake for the 80-mile long Davidson Ditch. TWELVE MILE SUMMIT 86.6m. (3,225alt.) was named by prospectors because it lay 12 miles southwest of their workings on Birch Creek. This is the divide between the Tanana and Yukon rivers. Herds of caribou, estimated at 50,000 head, sometimes pass over this summit during the autumnal migration (late August, early September). Such caribou crossings as this are posted, and hunters are forbidden by the game commission to shoot caribou in the vicinity. TWELVE MILE ROADHOUSE* 89.5m. (2,450alt.) has a large and comfortable inn, serving excellent meals, and is about midway between Fairbanks and Circle. One of the inn's goats is fond of tobacco, and will appreciate the proffer of a cigarette. At NORTH FORK 94m. (2,100alt., 36pop.) is the north branch of Twelve Mile Creek. Across the valley from 105m. is a hydraulic mine that is still in operation, although about $20,000 annually has been recovered here since 1903. EAGLE SUMMIT 109.2m. (3,880alt.) is the highest point on the entire Alaska road system. In winter, blizzards sweeping down from the Arctic make its passage by dog team a difficult and hazardous undertaking. Even in summer the traveler occasionally encounters a flurry of snow. Here, although it is south of the Arctic Circle, the midnight sun can be seen on June 21. At 115.5m. a short side road leads to MILLER HOUSE* (p.o., 2,100alt.), about a half mile distant, where good meals are served. The roadhouse is a center for the many miners in the district, as well as an informal employment bureau and gossip exchange. MAMMOTH CREEK 117.2m. (1,820alt.) is so named from the tusks and bones of prehistoric creatures found here. The frozen soil has preserved vegetation and animal life common in Alaska 20,000 and more years ago. The American Museum of Natural History, in cooperation with the University of Alaska, has secured thousands of specimens exposed by mining operations here and elsewhere in the district. In a single season over four hundred specimens of stone artifacts were uncovered, and a number of stone cores corresponding to those of Mongolian dune-dweller culture. Many specimens of the early Alaska bison (very similar to the present-day species but about twice as large) were secured, as well as some two hundred specimens of the early Alaska horse—about the size of existing Iceland ponies—one of which was found with flesh, fat, and hide adhering to three legs. The flesh had become desiccated to the consistency of leather, but the fat tissue was eagerly eaten by a prowling dog, who seemed to suffer no ill effects from his 20,000 year old dinner. Tusks of the Alaska mammoth and mastodon, measuring from seven to twelve feet, were found, as were skulls and leg bones of the Alaska lion. The prehistoric wolves, caribou, and moose were very much like their descendants today; but one skull of a bear was found that was twice the size of that of the largest contemporary Kodiak bear.

At CENTRAL* 129m. (p.o., 1,220alt., 50pop. est. 1938) is a roadhouse that provides excellent accommodations and meals for travelers. The proprietor also maintains a trading post for outfitting miners and trappers. From Central House a road leads nine miles to CIRCLE SPRINGS 138m. (p.o., 17pop.), one hour by air from Fairbanks. Here in the heart of the Circle mining district has been built a summer and winter resort centering around the hot springs. The waters contain, among other chemicals, silica, iron, aluminum, calcium, potassium, bicarbonate radical, chloride radical and sulphate radical. Under the management of Frank M. Leach a large, modern hotel and thirty-two cottages have been built to provide accommodations for 160 guests. A bathhouse with dressing rooms and pools has been constructed. All bathing facilities at the resort are supplied with water from the springs, which flow at the rate of 400 gallons a minute, with a temperature of 139°.

In addition to its health value, the water has been pressed into service as a heating agent for the hotel and other buildings. Hot-water pipes running through the buildings give a constant heat and are able to maintain an inside temperature of 70° or more when the thermometer outside goes as low as 72° below zero.

Five acres of gardens are raised at the springs during the long growing season, provided by the almost constant sunlight of summer aided by the warming influence of the springs. Greenhouses, heated by the springs, provide produce from April until late September.

Besides supplying the hotel dining room and the cottages with fresh vegetables, the gardens furnish produce to the many mining camps in the immediate vicinity as well as to the camps in the Coal Creek-Woodchopper district. Lettuce, beets, carrots, cabbage, cauliflower, broccoli, potatoes, and other vegetables grow abundantly. Lettuce, that takes a much longer time to mature in California, is ready for the table six weeks after it has been planted at the springs.

Circle Springs is the distributing and social center for a busy mining area. In the Circle district about four hundred men are engaged in mining. Many of these men and their families spend the winter at the springs or at the camps near by. The Coal Creek-Woodchopper district, a few minutes by air from the springs, employs from eighty to one hundred men during the mining season.

Transportation to the springs is largely by the Steese Highway during the summer months, but is limited to airplane service the rest of the year. An average of a plane a day stops at the resort. Many Fairbanks people fly to the springs for week-end and longer vacations. At times, during the summer when the highway is open, several hundred people are at the resort over a week end. A long-wave radio transmitter provides communication with Fairbanks and other Alaska communities. A telephone line runs from the springs to near-by mining camps and to Circle.

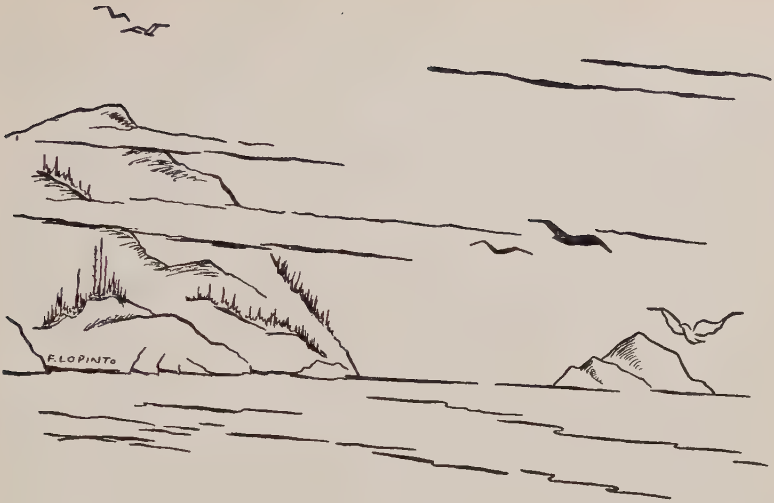
A large graded aviation field is maintained at Circle Springs. The field has been enlarged and improved to facilitate ski landings during the winter. Plans have been considered to extend the auto road thirty-five miles to tap the Coal Creek-Woodchopper mining camps.

Circle Hot Springs was discovered in the fall of 1897 by George Growe, who was prospecting on Deadwood Creek. While hunting, Growe wounded a moose and trailed him for miles. The moose crossed a small stream, which Growe noticed was unusually warm. He traced its source and located the springs, where the water was flowing from the hillside in the pretty oval that is now the site of the resort.

While Growe was at the springs the next April he found some attractive wild plants—wild parsnips. Not knowing that the roots of the plant are poisonous, he cooked and ate some, and became violently ill. His health failed, and he died some years later.

Frank Leach, owner and operator of the Circle Hot Springs, has been in the district thirty-three years, and at the springs twenty-nine years.

The Steese Highway continues from the junction of the Circle Hot Springs road to BIRCH CREEK 148.3m. (910alt.), where vegetables grown in the proprietor's own garden (rare in Alaska) are served at roadhouse meals. From 161m. is an excellent view of the Yukon River, four miles distant. CIRCLE 162.6m. (p.o., 900alt., 50pop.) is the junction of the highway with the Yukon River. Established in 1898, it was named Circle because the gold rushers mistakenly thought it lay on the Arctic Circle—actually it lies about 50 miles south. The town is only the shell of its former self, and many of its inhabitants are Natives. Here Steese Highway ends, connecting with river boats that in summer operate up and down the Yukon (see Part II, 2). Before the development of the Alaska Railroad, the highway system, and the advent of the plane, gold seekers journeyed between Dawson and Nome by way of this river, and most of the freight for the Interior came by way of river boats.



7. TO THE WESTWARD

Kenai Peninsula — Katmai National Monument — Kodiak — Alaska Peninsula—Aleutian Islands—Pribilof Islands.

SEWARD TO BRISTOL BAY BY OCEAN STEAMER

By reason of its scanty population, southwestern Alaska has few transportation facilities. Frequent dense fogs and lack of ground stations have deterred plane companies from starting regular service along the Aleutians. No regularly scheduled steamer service existed in 1939, and passengers were transported by freight vessels that had no regular ports of call. There will no doubt eventually be established, however, regular passenger service from Seward to Dillingham, when a steamer will visit ports on Kenai Peninsula, the islands of Afognak and Kodiak, then skirt the southern shore of the Alaska Peninsula and the adjacent islands, following the Aleutian chain west as far as Umnak—the island next west of Unalaska. From May to October such a schedule would include ports on Bristol Bay, and possibly Platinum and Bethel. During the winter months the shallow waters of Bristol Bay freeze, making water transportation impossible. The trip from Seward to Dillingham and return averages about 3,600 miles and takes from 22 to 30 days. Dillingham is readily reached from Anchorage by plane (service frequent but unscheduled) in about 6 hours.

Steamers do not touch at the Katmai National Monument, which contains the Valley of Ten Thousand Smokes, as there is no port, no settlement, white or Native, and hence no accommodation. Inaccessible also are the Aleutian Islands that stretch over 500 miles west of Umnak to Attu, the westernmost island belonging to the United States.

UNTIL 1938 transportation "to the westward" was furnished largely by the SS. *Starr,* a converted halibut schooner of only 525 tons burden, that sailed from Seward with freight and passengers once a month. Passengers were unanimous in cursing her violent motion and cramped quarters, but now that she no longer makes the trip, Alaskans recall her with regret. The first-class quarters consisted of a small dining saloon, out of which opened directly two toilets, encircled with tiny cabins not fully partitioned off, each containing three bunks and a washbasin. An important article of furniture fixed to each bunk was an iron bracket holding a large pasteboard cup, into which most passengers rendered up at least a portion of each meal. Few passengers traveled on the lurchy little *Starr* for pleasure; however, every passenger had an interesting story, and the tales told around the dining table when supper was cleared away had no equal anywhere in the world.

The country "to the westward" stretches hundreds of miles without a single tree, has the longest and straightest single line of volcanoes (some 50 or 60) anywhere in the world, a few of them very active, is surprisingly warm, bathed as it is by the Japan Current. This country, with its tiny settlements and their turnip-topped Russian orthodox churches, with its teeming wild life and its breath-taking scenic grandeur, is worth the fortitude it takes to make the trip by any steamer available. Whatever the vessel, it will have accommodations that Vitus Bering, the Columbus of these parts, would have considered the uttermost in luxury.

Leaving Seward, the first port is PORTLOCK (p.o.) about 100 miles southwest of Seward, named in 1888 after Captain Nathaniel Portlock, English fur trader, who about 1786 first remarked deposits of coal here. Fox are bred on near-by islands. SELDOVIA (p.o., 379pop.) is a town on Kachemak Bay. Its principal industries are fishing and canning, and there are veins of coal near by. Seldovia has the only landlocked harbor around the shoreline of Kenai Peninsula between Seward and Anchorage large enough to accommodate an ocean-going steamer. It is thus the central port of distribution for Cook Inlet towns, including the Homer agricultural district of some 500,000 acres and stock-raising country. Its name is derived from the Russian *seldovoi* (herring), and it still maintains two herring-curing plants and three salmon canneries. The town is also a central point for big-game hunters of bear, moose, and mountain sheep. Extensive lignite coal beds underlie all the area. Many of the beds exposed in the cliffs along the north shore of Kachemak Bay have burned, baking the clay and shale about them to bright orange and red. West of Seldovia, across the mouth of Cook Inlet, is MT. ILIAMNA (10,017alt.). Across the bay is HOMER (p.o., 207pop. est. 1938). Gold, copper, and coal are found in the vicinity, and there is much fishing and fur raising. Its population (35) as listed by the census of 1930 gives no hint of its growing importance. By 1937, 150 farmers had arrived in this fertile valley, and many more applications were on file. The Alaska Cooperative Association was planning to install 200 families in the area. Even before the arrival of these new settlers, the town provided a living for a scattering of farmers and had eighteen miles of road and a telephone system with thirty-five subscribers. Much of the land is treeless, all of it fertile, and most of it easy to cultivate. Almost unbelievable stories of bumper crops find their backing in the sober records of farmers in the settlement. The Methodist orphanage of Seward took over a farm at Homer in 1936, and cut sixty tons of wild hay, in addition to raising a large quantity of potatoes and garden truck. One Seattle produce house has a standing offer for Homer turnips at a premium of a cent a pound higher than Seattle prices. A large coal deposit on the reefs now provides fuel for two schools already in the settlement. Farmers boast of the climate. Official weather reports for Homer during January, 1936, showed eleven consecutive days when the temperature was above 40 degrees. Only one frost was reported for the month. There were five inches of rain. February first found pussy willows in bloom and wild celery sprouting, grass green and strawberry plants beginning to grow—this in a February that found even the mild coast of Oregon and Washington fighting an unprecedentedly cold season, and the Middle West, from which most of the Homer farmers have come, literally buried in snow. The completion of the highway already half built between Seward and Homer might settle the question of transporting the produce of a large farming colony. If it is completed the government will have made another step in its agricultural development of the Territory. If it isn't—there is still room for the agricultural pioneer. Once one of the great trapping regions of Alaska, the country near Homer has seen, with the settling of the country in the last two decades, depletion and, in some cases, extermination of the more valuable fur bearers. Marten has become extinct, the fox is extremely rare, and mink, beaver, and otter are much less numerous than a generation ago.

Ninilchik (p.o., 124pop.) is a fur-farming and fishing village on the east coast of Cook Inlet, about 40 miles south of Kenai. About 1830 a number of "colonial citizens," or superannuated employees of the Russian America Company, were ordered to settle here, and a few of their descendants remain. Kasilof (p.o., 45pop.) is a Native settlement 20 miles south of Kenai. On or near this site Russians built in 1786 two log houses surrounded by a stockade, called St. George, probably after one of the Company's ships. In 1937 a party surveying 30,000 acres for homesteading purposes on the Kenai Peninsula found near Kasilof the remains of a partially buried village, covered by overburden estimated to be at least three hundred years old. A partial excavation showed 31 well-preserved houses, each about 15 by 22 feet and 14 feet high. The cabin walls were approximately four inches thick, made of beach sand, bricks, logs, and sod. Each had a fireplace in the center. The odd thing about this lost village was that it was many miles from the coastline. It was thought at the time to be of Eskimo origin, although Eskimos are not known to have penetrated so far south. The aboriginal inhabitants of the Peninsula are at present mostly Kenai Indians, a branch of the great Athapascan family. The Kenai in turn are divided into several different groups, speaking slightly different dialects. Kenai (p.o., 286pop.) is a Native settlement, having a roadhouse, a Greek Orthodox church, and a Protestant mission. In 1791 Grigor Konovalof, in command of the *St. George,* built a fort here which he named St. Nicholas, and in 1869 the United States maintained a garrison. Across Cook Inlet, west of Kenai, is Mt. Redoubt (10,200alt.).

All these settlements lie on Kenai Peninsula, which juts out of the southern coast into the Gulf of Alaska. It is about 150 miles long, and so irregularly shaped that its coastline is more than 1,000 miles. It is larger than Massachusetts, with a no more rigorous climate, and contains at least 75 percent as much good farm land. It has gold, game, and fur; grassy plains, forested valleys, peaks and glaciers, clear trout-filled streams, hills filled with goat and sheep, lowland forests with moose, and land and waterfowl.

Here were some early and well-known settlements in Russian America. Past this peninsula came Captain James Cook in his search for the northwest passage, turning back again at Turnagain Arm. But the cartographers attacked Cook, charging him with hastily exploding their theories of the northwest passage, and of being a mere "pursuer of peltry." They pointed to his "river" (Cook Inlet) and exclaimed, "What is that but the strait of Admiral de Fonte, who passed from east to west thereby?" George Vancouver, a hard-headed Norfolk salt who had sailed on Cook's expedition, pointed the prow of the *Discovery* into Cook's "river" in 1794, and finally put an end to the theories of the mapmakers by giving the "river" its proper designation, of inlet. Few white men visited the district again until the mining excitement of 1896 in the Hope and Sunrise regions. When this excitement subsided, the peninsula was again neglected, save by hunters and a few prospectors. With the permanent settlement of Alaska and the building of the Alaska Railroad came a realization of its agricultural importance. A resettlement plan was drawn up in 1937 to aid one hundred families of Cordova, who would be left without resources by the closing of the Kennecott mines, to settle on the peninsula. The plan aimed to secure Federal aid without the incurring of excessive debts by individuals, to build a cannery, a cold-storage plant, and a sawmill, and to pack fish, berries, and vegetables for community use.

Leaving Kenai Peninsula, steamers usually head for the Afognak-Kodiak Island group. The town of AFOGNAK (p.o., 298 pop., mostly Natives), on a southern point of the island, consists of a row of dwellings along a curving beach. There is a Federal school for Natives, and trapping and fox raising are the principal industries. The town was founded during the first quarter of the nineteenth century under the name of Rutkovsky by pensioned employees of the Russian America Company. Afognak is a Native name. Separated by Kupreanof Strait (named after the governor who succeeded Wrangell in 1836) is KODIAK ISLAND, discovered on September 8, 1763, by Glotov, a Russian fur hunter, who anchored in Alitak Bay. The Native name was Kikhtak, the Innuit word for island, and the tribe Kaniag. The name Captain

Cook got from the Russians, Kodiak (pronounced *Kadyak*), probably was a combination of the two. English-speaking map makers used the Russian spelling Kodiak, but pronounced it English fashion rather than Russian fashion, where the unaccented *o* becomes a flat *a*. The phonetic spelling, Kadiak, still occasionally survives. The island, 100 miles long and 50 miles wide, contains many large brown Kodiak bears, said to be the largest carnivorous animal on earth. The largest bear ever killed was shot on Kodiak Island, its hide measuring 11 feet 3 inches. This bear weighed fully 1500 pounds, with hind feet 8 by 15 inches, a head 26 inches across, and a hide that alone weighed 135 pounds.

The first Russian settlement on Kodiak was made by Shelikof at Three Saints Bay, named for his ship. In 1792 the settlement was removed to the present site of the town of Kodiak, close to a good supply of timber and in a sheltered harbor, and called by the Russians Paul's Harbor. Previous to the establishment of New Archangel, or Sitka, this was the headquarters of the Russian America Company. Sauer thus describes Shelikof's establishment around 1794:

"This establishment consists of about 50 Russians, including the officers of the Company. . . . The buildings consist of five houses after the Russian fashion, barracks laid out in different apartments, like the boxes in a coffee house, on either side, with different offices: An office of appeal to settle disputes, levy fines and punish offenders by regular trial; here Delareff presides; and I believe that few courts of justice pass a sentence with more impartiality: An office for receival and delivery, both for the Company and for tribute: The commissaries' department for distributing the regulated portions of provisions: Counting-house, etc.: all in this building, at one end of which is Delareff's habitation. Another building contains the hostages. Besides which there are storehouses, warehouses, rope-walk, smithy, carpenter shop, and cooperage.

"This and the nearer islands are inhabited by about 1,300 grown males and 1,200 youths, with about the same number of females, according to the register kept by Shelikof's Establishment, now under the direction of Yefstrat Ivanitch Delareff, a Greek; who informed me that he had now out on the chase for the company upwards of 600 double baidars of Natives, each containing two or three men. These are divided into six parties, each under the direction of a single Peredofshik, or Russian leader. Besides these, small parties are sent out daily to fish for halibut, cod, etc. The females are employed in curing and drying the fish; in digging, washing and drying edible roots; in collecting useful plants, berries, etc., and in making the dresses of the Natives, and also for the Russians. About 200 of the daughters of the Native chiefs are kept at the Russian habitations near our anchoring place as hostages for the obedience of the Natives; and as far as I could learn, they are satisfied with their treatment. The males are less satisfied; and at the first arrival of the Russians, seemed inclined to oppose their landing on the island; but Shelikof, surprising their women while collecting berries, carried them as prisoners to his habitation, and kept them as hostages, only returning wives for daughters, or the younger children of the chiefs. Every considerable habitation of the Natives had large baidars capable of containing 40 or 50 men. These were all purchased by Shelikof, and the Natives now have only small canoes, none of which carry more than three. They seem reconciled to the rules made by the present chief of the company, Delareff, who governs with the strictest justice, the Natives as well as the Russians, and has established a school where the young Natives are taught Russian, reading and writing. He allows some of the female hostages to visit their relatives for a certain time; these returning, others are allowed to go home; and on application of anyone for his child, it is not refused. The whole number of hostages is about 300.

"The males are employed in the chase in turn, as are also the females: I mean, for the benefit of the community; for they lay in an amazing stock of provisions, roots, berries, etc., sufficient for the winter's supply of the whole island, both Natives and Russians; a circumstance which convinces the savages that the Russians are not their absolute enemies; for Delareff says that they never laid in a supply of food for the winter till the Russians taught them; but in bad weather were obliged to collect cockles, mussels, and other shellfish, or the refuse of the sea.

"Luxuries such as tobacco, beads, linen, shirts, and nankeen dresses, they pay for in particular. I saw that such of the parties as were successful in procuring rich skins received a certain payment; for each sea otter, a string of beads four feet long; and for other furs in proportion; and that only the food and seal skins were the property of the community, of which the Natives enjoy the greater share, being by far the most numerous; and seal skins are used by the Natives to mend their baidars, and to make new ones; in the latter case, they are purchased for furs, foxes, marmots, otters, etc., or by service.

"The natives call themselves Soo-oo-it, and their magicians are Kanghement. I could obtain no name from them for the Almighty; though they say there is a superior being who has the command of all the spirits; and that the wrath of these spirits is only to be appeased by offerings, and in some cases their slaves are sacrificed, but very seldom; for all the prisoners they take in their wars (which are almost perpetual, one tribe against another) become slaves, and are subject to ill treatment, particularly from the women. The female prisoners are all slaves, and are sold from one tribe to another for trinkets, instruments, etc. Not only their prisoners, however, are their laborers or slaves, but orphans become the property of those who bring them up, and are frequently redeemed by relatives of the parents; especially such as were inhabitants of other islands.

"The dwellings of the Natives differ from those of Oonalashka. They are but very little sunk in the ground, and have a door fronting the east, made of framed seal skin; a fireplace in the middle; a hole over it through the roof, which serves both for the discharge of smoke and the admission of light. The sides, partitioned off for sleeping and sitting places, are covered with grass mats, much coarser made than those of Oonalashka. Each hut has a small apartment attached to it, which serves for a vapor bath; stones are heated in the open air and carried inside, where heat is increased to any degree by steam from water poured on the hot stones.

"The customs of these savages are nearly allied to those of the Oonalashkans. They have the same kind of instruments, darts, and boats or baidars; but much worse made; nor are they so active on the water. Their dances are proper tournaments, with a knife or lance in the right hand, and a rattle in the left; the rattle is made of a number of thin hoops, one inside the other, covered with white feathers, and having the red bills of the sea parrot suspended on very short threads; which being shaken, strike together, and make a very considerable noise; their music is the tambourine, and their songs are warlike. They are frequently much hurt, but never lose their temper on account of it. In these dances they use masks, or paint their faces very fantastically. The dances of the women are only jumping to and fro upon their toes, with a blown bladder in their hand, which they throw at anyone whom they wish to dance with, and who always accepts the challenge.

"The first character is the athletic and skillful warrior; the second, the fleet and expert hunter; the former enjoys his prisoners and the booty of his enemy; the latter has his wives, laborers and slaves by purchase, and the ability he possesses to maintain them. The most favored of women is she who has the greatest number of children. The women seem very fond of their offspring; dreading the effects of war and the dangers of the chase; and some of them bring up their male children in a very effeminate manner, and are happy to see them taken by the chiefs to gratify their unnatural desires. Such youths are dressed like women, and are taught all their domestic duties.

"There is no ceremony in marriage: the ability to support a woman gives the authority to take them, with their consent; in which case the couple are conducted by the relatives of the girl to the vapor bath, which is heated and they are left together; but some present is generally made to the girl's father and mother. I enquired whether they lent their wives to each other? They told me, No; unless they were barren, and desired it; if they then had a child, it became the property of its father.

"No other ceremony is observed at births than washing the child, and giving it a name.

"The dead body of a chief is embalmed with moss, and buried. The most confidential of his laborers are sacrificed and buried with him; also his instruments of war or chase, and some food. Numbers of the natives are baptized, but Delareff, director of the Company, would not allow our priest to compel any of them to become Christians; however he assisted him in persuading as many as he could. Such as were at the school willingly embraced the Greek religion, as did also numbers of the women.

"The dresses of the natives are the same as at Oonalashka, but worse made; they are open around the neck, and have but very few ornaments. They are very fond of blue beads and amber, and carry on a trade with the natives around Cook's River, where they purchase their baidars and canoes for trinkets, provisions, and oils of whales and seals. They use darts and lances headed with slate, with which they kill the sea animals. They also use poison to their arrows, and aconite is the drug adopted for this purpose. Selecting the roots of such plants as grow alone, the roots are dried and pounded, or grated, water is then poured on them and they are kept in a warm place until fermented; when in this state, the men anoint the points of their arrows or lances with it, which makes the wound inflicted mortal.

"The most valuable fur is that of the sea otter, called by the hunters here and in Russia, Morskoi Bobre. The fur of the young ones is rough and long, of a light brown color (like a young bear cub), and is called Medvedka, the diminutive of bear: this is of no value: the middle sized are darker and valuable; and these are called Koshlok; but the most valuable are what is called Matka, or mother; the largest are about five feet long, with rich fur nearly black, mixed with longer hairs of a glossy white. The fur is upright, not inclining in any way, from an inch to an inch and a half long. I had a young sea otter dressed, and it tasted just like sucking pig. There are no more on the coast of Kamtshatka: they are now very seldom seen on the Aleutian Islands; and of late, they have forsaken the Shumagin Islands; and I think, from the value of the skin having caused such devastation among them, and the pursuit after them being so keen, added to their situation between latitudes of 45 and 60 degrees, that 15 years hence there will hardly exist any more of this species."

The peculiarity in sexual customs described by Sauer is confirmed by Sarachef in his *Account of a Voyage of Discovery,* published in 1806, where he relates, "One of these Kadyakers, who attended this hunter, and appeared to be about forty years of age, differed altogether from the others, having the appearance of a female, with his nose punctured, and rings of pearl-enamel in his ears. We learnt from the hunter that this man supplied the place of a wife to one of the islanders and performed all the offices belonging to the female sex."

The present-day town of KODIAK (p.o., 442 pop.) is the largest in southwestern Alaska, and is about 200 miles southeast of Seward. On the knoll above is a quaint Russian church and white cottages; below along the waterfront are warehouses, wharves, and stores overlooking a bay with wooded islands and headlands. Like a wall protecting the harbor from the rough waters of Shelikof Strait rise dark rugged mountains. The town has a public school, a Baptist orphanage and church, a Russian Orthodox church, two hotels, and two general stores. There are many salmon canneries in the vicinity, foxes are bred at Eagle Harbor, stock is raised, and hunting parties equipped.

At Port Hobron is a whaling station. An appropriation of $77,000 (authorized in 1935) provides for the construction of a 22-foot channel and an anchorage basin as soon as a cold storage plant is completed. In 1936, 9,768 tons of commerce, valued at $1,659,000, passed through this port. Work will start in 1939 on a huge naval and airplane base.

In June, 1912, MT. KATMAI (6,970 alt.), a volcano 100 miles distant on the mainland, suddenly blew off its top and filled the air with sharp volcanic ash that blanketed fields and villages, crushed roofs, and changed the green island of Kodiak into a gray-brown desert overnight. For forty-eight hours inky blackness enveloped the town, rent by occasional tongues of flame, split by peals of thunder. Captain Perry of the revenue cutter *Manning* rescued from four to five hundred people, but approximately two hundred lives were lost in the smaller villages. A year later, dust still filled the air and lay in huge drifts on the hillsides. Fragments of pumice covered the shore. The bears had become bald, their fur eaten away by the lye leached from the volcanic ash on their hides, by the rain. Most of the human inhabitants had returned to their homes, but lack of grass prevented the return of cattle, and ash-clogged rivers seriously interfered with the annual upstream migration on which the fishing industry depends. Today there is no obvious evidence of the eruption of 1912—the hills are green again, the trees are free of ash. But under the thick growth of moss lining the dead lower limbs of the older spruce trees can still be found almost an inch of ash, and hundreds of dead cottonwoods, now rotting away, stand as markers of the event.

The only good done by the ash storm was the improvement of roads, as volcanic ash makes the best kind of roadbed. Excellent roads run from Kodiak to near-by points: the Mill Bay Road, constructed by Russians early in the nineteenth century to transport flour and meal ground from grain raised in the Russian Colony at Ross, California; and Albert Highway, construction of which was started in 1924, built high on the cliffs overlooking the bay and, at the head of the bay, turning inland through fields and meadows to Buskin River, where there is good trout fishing.

Steamers usually call at a number of canneries and small fishing villages in the vicinity of Kodiak before crossing Shelikof Strait. OUZINKIE (p.o., 200 pop., est. 1938, largely Aleut and Russian) is on Spruce Island, northeast of Kodiak, from which it is separated by

Narrow Strait. Ouzinkie is a Russian word meaning "narrow." Spruce Island was settled by Russians while Kodiak was still their chief port, and was used by them as a shipbuilding yard. There are now two docks on the island, and seaplanes may land in the bay. A packing company maintains a bunkhouse where room and board may be had for $1 to $1.75 a day. The general store can supply tourist information for all of the Kodiak Island district. There is a Greek Orthodox church, a Baptist mission and orphanage, and a Territorial school on this island. At Monk's Lagoon, the home of a monk from Mt. Athos, Greece, is a shrine containing relics of an ancient saint, worshiped by the Aleuts and Russians. A public swimming beach is maintained in the heart of the village, and trout and red and silver salmon are found within an hour's boat ride. UYAK (17 pop.) is a Native village about 60 miles west of Kodiak. At KARLUK (p.o., 192 pop.) is a precipitous mountain mass 1,600 feet high locally known as Karluk Head. ALITAK (p.o., 75 pop.) is a fishing village of Aleuts on the west coast of Kodiak Island at Alitak Bay. A Russian America Company map of 1849 shows a settlement of Russians and Aleuts here, called Kashukugmiut. The town was later known as Akhoik, a Russian name, changed to Alitak during the World War. OLD HARBOR (p.o., 94 pop. chiefly Aleuts) is on the southeast shore of Kodiak Island. This was Shelikof's Three Saints Harbor. The Native name is Starigown.

Opposite the western side of the Afognak-Kodiak group, across Shelikof Strait, is KATMAI NATIONAL MONUMENT (inaccessible to tourists), probably the largest and most awesome group of associated volcanic phenomena to be seen anywhere in the world. The area of the Monument is over 1,700 square miles. The Valley of Ten Thousand Smokes, from which great columns of white vapor pour out of the fissured ground from many times ten thousand vents, includes a complicated system of branches, irregular in shape, and extends from Katmai Pass northwestward to the head of Naknek Lake near the western side of the Alaska Peninsula, a distance of 32 miles. The area of the valley is 70 square miles, and its average width two miles.

Prior to 1912 Katmai Volcano had been inactive. On June 6, 1912, the eruption began at 1 P.M., with a terrific explosion, the sound of which was heard 750 miles distant. At 3 P.M. there was another explosion. Steam and ash rose several miles in the air and spread over an area as large as Connecticut, extending total darkness over 100 miles. Fumes were observed at Vancouver Island and Puget Sound, 1,500 miles away. Ivan Orloff, who with a group of Natives was fishing near by, wrote to his wife on June 8, "A mountain has burst near here, so that we are covered with ashes, in some places 10 feet and 6 feet deep. . . . Night and day we light lamps. In a word it is terrible, and we are expecting death any moment, and we have no water. . . . Here are darkness and hell, thunder and noise. The earth is trembling." American Pete, chief of the Sabonoski tribe, the only eyewitness of the eruption, described the phenomenon in six words that compare for laconicism with the first sentence of Genesis: "Fire come down trail from Katmai." The first detailed news of the explosion came to the outside world when the steamer *Dora,* which had been unable to reach Kodiak, returned to Seward, her decks covered with ash.

The National Geographic Society sent an exploration party to the district in 1915, consisting of Prof. R. F. Griggs, botanist of Ohio State University, B. B. Fulton, etymologist of the New York Experimental Station, and L. G. Folsom, manual training teacher of Kodiak. When the party landed at Katmai Bay, they saw evidences of a great flood. Small avalanches were still rolling down the mountain, most of the trees had perished, the old church was in a sea of mud, and some of the Native's houses were filled with pumice and others submerged. The river, formerly a body of deep water five miles wide, was a maze of quicksand crisscrossed by a network of small streams. The old trail between Katmai village and Saboniski, at the head of Naknek Lake, was covered with ash and pumice. Tens of thousands of holes had been blown through the floor of the valley. All vegetation had been burned by a torrent of incandescent sand that covered a total area of 53 square miles and had an estimated volume of more than one cubic mile; as a result, there was no fuel, and cooking had to be done in the vents, where temperatures reached as high as 1,200°. The whole valley was a riot of bright color, and the fine-grained mud was so similar to ground oil pigments that an artist painted a number of pictures with the mud, using canvas from a ruined tent.

For over 15 miles down the Valley of Ten Thousand Smokes, in the northwestern portion of the reservation, the ground is broken open, giving vent to several million fumaroles or little volcanoes, from which rise jets of steam. Some of the jets throw their steam to over a thousand feet in the air, and hundreds of others go up to a distance of 500 feet, all merging above the valley into one titanic cloud. Scientists say that this astounding valley is an example of what the geyser basins of Yellowstone Park were at the time when Yellowstone's volcanoes first ceased their activity, and they predict that in the course of time, probably many centuries, the surface will cool sufficiently for the vents to retain water some distance down. When this happens the steam below, pressing against the water near the surface, will force it upward into the air, and a new geyser field will come into existence. Recent visitors (1938) report that the fumaroles already have begun to show less activity than formerly.

The snow-capped crater of Katmai, left by the explosion, has a rim three miles in width. The circumference, measured along the highest point of the rim, is 8.4 miles. From the bottom of the crater to its rim is 3,700 feet, and its capacity is 4,000,000,000 cubic yards. In the crater lies a lake of milky blue water over a mile long and nearly a mile wide, in which is a little crescent-shaped island measuring 400 feet from tip to tip.

Within five miles of the fumaroles is heavily timbered country, little injured by the eruption, which supports an abundance of wild life. The upper end of Naknek Lake, lying within the western boundary of the park between the wooded slopes of MT. LA GORCE (3,315alt.) and MT. KATALINAT (5,800alt.) is full of large trout, 24 to 32 inches long; and Coville, Grosvenor, and Brooks lakes are near by.

The eruption carved out a new harbor in what had hitherto been shown on all charts as dry land, in an arm of Amalik Bay, surrounded by rugged mountains, rising 3,000 feet out of the water. This the last National Geographic Society Expedition in 1919 discovered and christened Geographic Harbor. When the harbor is developed and an automobile road about 30 miles in length is constructed, the area will be readily accessible and will undoubtedly draw many visitors. In the meantime, none but the hardiest and most experienced explorers should attempt a visit to the region.

The land was set aside as a national monument by presidential proclamation, September 24, 1918. It has a total area of 1,087,990 acres.

The volcanic region of Alaska stretches along Alaska Peninsula for some 1,200 miles, from MT. REDOUBT (10,200 alt.) and MT. ILIAMNA (10,020 alt.), both active volcanoes, on the north, to Bogoslov Island on the south. MT. AUGUSTINE (3,970 alt.), on Augustine Island toward the western side of the mouth of Cook Inlet, was the most recent volcano to erupt in Alaska.

KANATAK (p.o., 78 pop.), supposed to mean *snowy* in Aleutian, is a ghost town whose inhabitants live in fine houses along a street with buildings bravely marked "Bakery," "Café," and so on. Fishing and trapping are the principal industry, since the subsiding of an oil boom early in the century. There are three principal petroleum areas in Alaska: the regions around Point Barrow, around Katalla, and on the east coast of the Alaska Peninsula from Tuxedni Bay near Iliamna to Kanatak and Wide Bay. In 1937 and 1938 the third area was receiving renewed attention. A test well drilled on the Iniskin-Chinitna Peninsula, near Mt. Iliamna, was the most northerly commercial oil well in the world, and was the first well in Alaska to be drilled with modern methods (similar to those used in California), that permit a depth of 10,000 feet or more. The Iniskin Drilling Company brought 2500 tons of machinery and equipment to the site, including 11,000 barrels of fuel oil, eight miles of pipe, 200 tons of clay and mud-conditioning chemicals from the Mohave Desert, and 250,000 feet of lumber for constructing camps and housing, for equipment. All this was freighted ashore in 40-ton lighters and hauled six miles inland, where a 122-foot steel derrick was erected on a concrete foundation. The geological formations are right for oil—it remains to be seen whether it exists in commercial quantities. If it does, this source of fuel would be of great value for national defense, and could supply the naval bases at Kodiak and Unalaska and the army air base at Fairbanks.

Roughly on a line with Sutwik, the Semidi (Russian for "seven"), and Chirikof islands—the last named for Captain Alexei Ilich Chirikof, commander of the *St. Paul,* companion ship of Bering's *St. Peter*—is ANIAKCHAK CRATER. Comparable craters to this one, its diameter measuring the stupendous distance of six miles, are found on the moon. It was discovered and named by R. H. Sargent of the Geological Survey in 1923, and lies about midway between the Pacific and Bering Sea on Alaska Peninsula. It was thought to be extinct until May 1, 1931, when at exactly 12 noon it exploded, and clouds of gas and ashes rushed four miles straight up into the air and spread out like a gigantic mushroom. The earth shook, flames and smoke rose thousands of feet high, and volcanic ash hurled through the air. The eruption went on continuously for ten days, and on May 11 another terrific explosion occurred. After resting nine days, Aniakchak blew up for the final time on May 20. All this display was witnessed by only one white person, Frank Wilson, who lived fifteen miles away. The Aniakchak River, a small stream, rises in the crater of the volcano. Father Hubbard, the "glacier priest," estimates the floor area of Aniakchak at 30 square miles. He visited it after the 1931 eruption, and says, "It was the most terrible prelude to hell I could imagine. Last year it was a plant, fish, and animal world in a 30 square mile area enclosed by 3,000-foot walls, but now it was an abomination of desolation with everything blotted out." Father Bernard Rosecrans Hubbard was born in San Francisco in 1888. He has taught in many Jesuit schools and was one time chaplain to the Austrian empress. Since 1926 he has been head of the department of geology at the University of Santa Clara. During this time he has conducted many explorations in Alaska, and has himself climbed Aniakchak, Shishaldin, and Katmai volcanoes. In addition to many scientific papers, he is the author of *Mush You Malemutes* (1932) and *Cradle of the Storm* (1933).

CHIGNIK (p.o., 60 pop. est. in 1938, mostly Natives) is a fishing settlement in a beautiful crescent harbor surrounded by towering mountains. It contains a Russian Orthodox church. Its name is probably of Native origin, given it by the Russians. West of Chignik is MT. VENIAMINOF (8,400 alt.), which was in eruption in June, 1939, was named for Father Ivan Veniaminof, Metropolitan Innocent of Moscow. Born Ivan Popof in 1797, in Irkutsk province, Siberia, he entered the theological school of Irkutsk as a ward of the parish. Upon an order from the Holy Synod in Moscow in 1823 that a priest be sent to Unalaska, Father Veniaminof offered to go. He instructed the Aleuts in the practical arts, learned their language, beliefs, and customs, and began the translation of hymns, prayers and portions of the Bible into Aleut. On his travels he always carried a notebook in which he recorded all he heard. Later he gathered his notes into a volume that still remains the foundation for students of Aleutian ethnology. He also compiled a grammar of the Aleut and Kodiak languages. After ten years at Unalaska he was transferred to Sitka, the Russian capital of Alaska, as pastor of St. Michael's Cathedral, the clock of which he built with his own hands. Here he compiled important ethnological data concerning the Tlingits. In 1838 he left Sitka for Moscow, returning in 1841 as the first bishop of Alaska. From that time on he traveled often from Sitka to Moscow and throughout the Russian colonies in America. In 1868 he was given the title of Metropolitan of Moscow, and remained in Russia, where he died in 1879.

PERRYVILLE (p.o., 93pop.) is a Native fishing village 50 miles south of Chignik. After the village of Katmai had been destroyed in 1912, Captain Perry of the *Manning* brought its inhabitants to this spot, where they settled, naming the village after the commander of the relief ship. Here steamers usually leave the coast and touch at fishing villages on the larger SHUMAGIN ISLANDS, a group named by Bering after one of his sailors who died of scurvy near here on August 30, 1741. There are no trees on these islands save dense thickets, scrubby elders, and willows. Delicate alpine flowers grow between the rocks on the heights, and here are found dwarf poppies, willows hardly larger than clover plants, and tiny dwarf dandelions barely one inch high. The only mammals are small rodents, upon which the many owls eagerly feed. The insects are all wingless—insects with wings would be swept into the sea by the strong winds. The climate is mild and damp. In many respects the Shumagins resemble the Aleutians, which the ship is now approaching. On Unga Island, the largest of the Shumagins, is the village of UNGA (p.o., 150pop.). In the Russian period this was a sea-otter station. About 1900 extensive gold mining was done here and in recent years it has been a center for cod fishing. SAND POINT (p.o., 69pop.) is about 15 miles northeast of Unga. The Methodist Mission Board planned in 1938 to equip a hospital here to serve the entire region. The steamer channel runs between Dolgoi Island, west of the Shumagins, and the mainland, on which now appears MT. PAVLOF (8,900alt.), an active volcano which in 1937 showered the countryside with ash. South of Mt. Pavlof is BELKOFSKI (p.o., 123pop.), a Native settlement, its name, meaning "squirrel," given it by Russians before 1835. KING COVE (p.o., 90pop. est. 1938), named for its founder, is a fishing village with a Territorial school. At FALSE PASS (p.o., 16pop. est. 1933), so named because it and Isanotski Strait seem at first sight to offer passage to ocean-going vessels between the Pacific Ocean and Bering Sea, is a small fishing settlement. Here the Alaska Peninsula ends, and the Aleutian Islands begin.

From Unimak the Aleutians stretch westward some 1,300 miles from the Alaska Peninsula to Kamchatka, the parallel that marks the boundary line between the western and eastern hemispheres (180° both east and west of Greenwich) occurring between the Andreanof and the Rat groups. The Aleutians enclose the great Bering Sea between the United States and the USSR. Attu, the westernmost of the Aleutian Islands belonging to the United States, lies about on the 173rd parallel—here in the month of June the sun is setting at the same hour it is rising off the coast of Maine. The Komandorski group, belonging to the Soviet Union, completes the chain that stretches from the Alaska Peninsula to Kamchatka.

In these treeless islands of volcanic origin, bathed in a moist climate, covered with luxuriant growth of grasses and soft moss, the history of Alaska began. Perhaps it was over this chain of islands that man first crossed to Alaska from Asia. The very name Alaska had its origin here. Cook noted in 1778, "The American continent is here called by the Russians as well as by the islanders Alaschka, which name though it properly belongs only to the country adjoining Oonemak is used by them when speaking of the American continent in general, which they know perfectly well to be a great land." The Aleut name *al-ay-ek-sha* is supposed to mean "mainland," and even today Natives of the Shumagins are reported as saying, when they intend to cross over to the peninsula, "I am going to Alaska" (i.e., the mainland). When Russian fur hunters began to swarm into these islands soon after Bering's third voyage in 1741, they found them inhabited by a large nation, perhaps numbering 25,000: a peaceful, fish-eating people, called by the Chukchi on the Asiatic mainland *kitchin elaet,* later corrupted into *Aleut.* "Their behavior," wrote Sauer, "is not rude and barbarous, but mild, polite, and hospitable. At the same time the beauty, proportion and art with which they make their boats, instruments, and apparel, evince that they by no means deserve to be termed stupid; an epithet so liberally bestowed on those whom Europeans call savages."

In a few years the Aleuts had been brought by the Russians to a state of slavery, and their numbers reduced almost unbelievably. "According to the best intelligence I could obtain of the population of all the Aleutian Islands," wrote Sauer of a period scarcely fifty years after Bering's voyage, "the number of males including children does not exceed 1,100, of which about 500 of the most active are employed by different parties of Russian *promyshleniki,* or hunters. . . . It is much to be lamented that they are under the sway of roving Russian hunters, who are infinitely more savage than any tribes I have hitherto met with; nor do I see any means of checking their outrages; for the authority of the government can never reach these distant regions." Captain Billings, when in Unalaska in 1790, recorded in his journal, "In consequence of complaints made to me in form, on my first arrival at Okhotsk, by several people who were sent by the Government to collect the tribute of the Aleutian Islanders against the hunters, for cruelties to the Natives, I represented the same and received a private mandate from Her Imperial Majesty (Catherine of Russia) ordering me to inspect the behavior of the merchants and hunters in these parts. I have in consequence made it my business at Sithanak and Oonalashka to make enquiries into the treatment the Natives receive from these people; and I have been, as well as every gentleman on board, an eyewitness of the abject state of slavery in which these unfortunate islanders live under the Promyshleniks. . . . These people employ all the men of Oonalashka and Sithanak in the chase, taking the fruits of their labor to themselves and not allowing the Natives necessary clothing. There is therefore no name so dreadful to them as that of Peredofshik (the leader of a gang of hunters). On the arrival of the vessel at any place where they purpose making a stay they haul her on shore; immediately send the Natives on the chase, even to the farthest of the Shumagin Islands; and then take by force the youngest and most handsome of the women for their companions."

A Russian officer on Billings' expedition noted in his journal in the same year, "The company of hunters now here make the boast that they clothe and feed the islanders; which they do in the following manner: The Natives, being under their control, are sent out in parties to chase sea animals and catch fish. The produce of the chase is delivered into the Company's stock, out of which the Natives receive an allowance. Such of the inhabitants as are too infirm or too young to be sent out on aquatic excursions are used in domestic drudgery or digging edible roots; while the women are occupied in making or mending clothing from the inferior skins of animals and birds. The hunters are accustomed to act as follows: On the arrival of a vessel at an inhabited island, the Peredofshik sent an armed boat to the habitations to take from the Natives all their furs and valuable articles that they possessed; and if the least opposition was made, they were silenced by the muskets of the hunters. Wives were taken from their husbands, and daughters from their mothers; indeed the barbarity of their subduers to the crown of Russia is not to be described. They used not infrequently to place men close together, and try through how many the ball of their rifle-barreled musket would pass."

Many interesting descriptions of the Aleuts are given by early navigators before Father Veniaminof arrived and made his more scholarly investigations. Sauer wrote:

"The people are of middle size; of very dark brown and healthy complexion; a round face in general, small nose, black eyes and hair, the latter very strong and wiry. They have scanty beards, but very thick hair on the upper lip. The under lip is, in general, perforated, and small ornaments of bone or beads inserted; as is also the septum of the nose. The women have the chin punctured in fine lines rayed from the center of the lip, and covering the whole of the chin.

"The arms and cheeks of some are also punctured. They are very clean in their persons; and the men are very active in their small baidars. The women are chubby, rather pretty, and *very kind.*

"They formerly wore a dress of sea-otter skins, but not since the Russians have had any intercourse with them. At present they wear what they can get; the women, a parka of kotik, or ursine seal, with the hair outward. This is made like a carter's frock, but without a slit on the breast, and with a round upright collar about three inches high, made very stiff, and ornamented with small beads sewed on in a very pretty manner. Slips of leather are sewn to the seams of this dress, and hang down about 20 inches long, ornamented with the bill of the sea-parrot and beads. A slip of leather three or four inches broad hangs down in front from the top of the collar, covered fancifully with different colored glass beads, and tassels at the ends: a similar slip hangs down in back. Bracelets of black sealskin are worn round their wrists about a half inch broad, and similar ones round their ankles, for they go barefooted, and this is all their dress. Their ornaments are rings on their fingers, earrings, beads and bones suspended from the septum of the nose, and bones in the perforated holes under the lip. Their cheeks, chin and arms are punctured in a

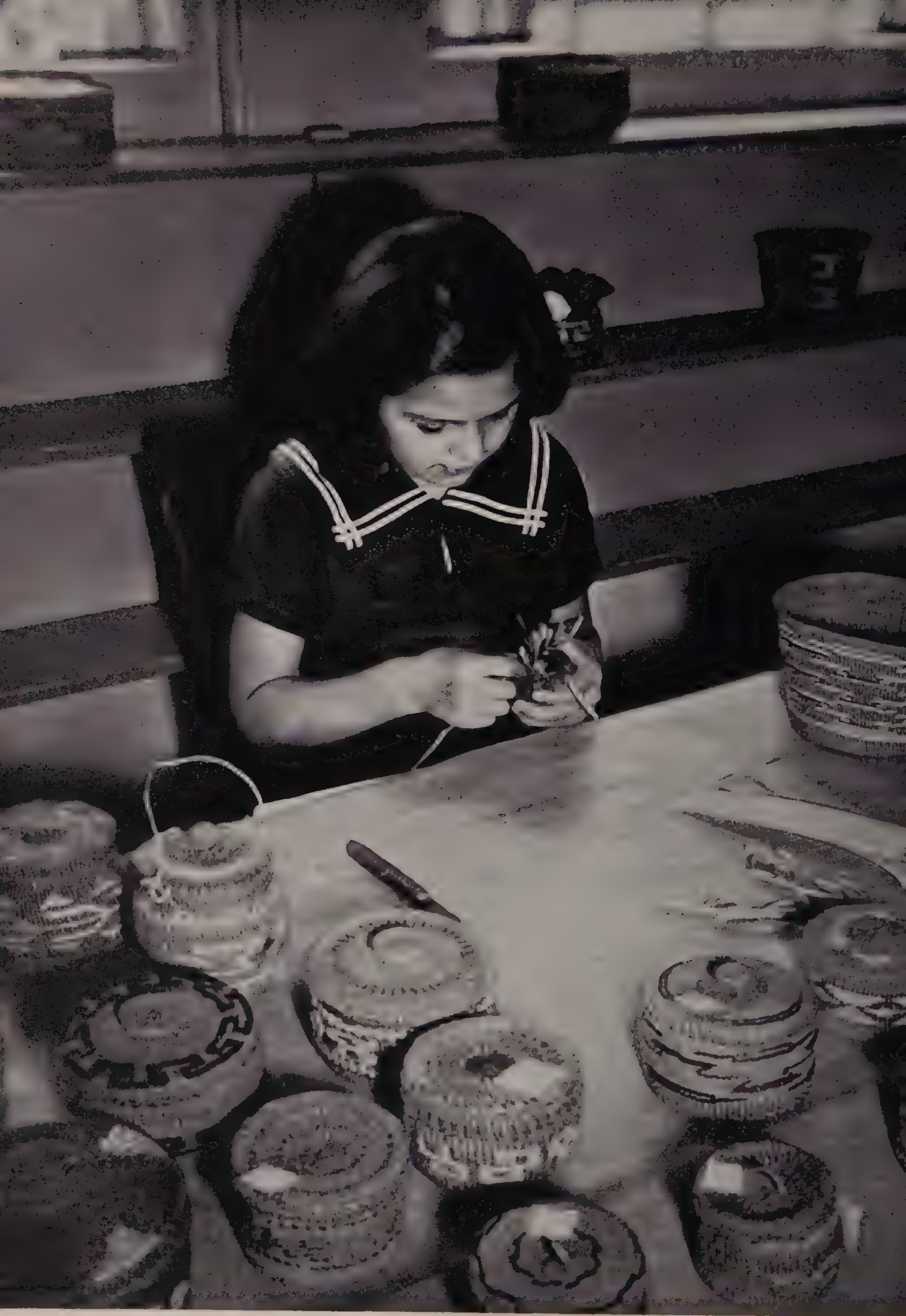
The First Alaskans

THE Native population of Alaska is composed of four distinct ethnic groups: the Tlingit, the Athapascans, the Aleut, and the Eskimo.

The Eskimo live along the Arctic Ocean and Bering Sea and in the deltas of the Yukon and Kuskokwim rivers. They are a hardy, good-humored, extraordinarily honest people. Their present economy is based chiefly on the reindeer, introduced into the Territory for that purpose by the Bureau of Education; but the Eskimo is also a fur-trapper and fisher. The Aleuts, a related people in the Alaska Peninsula and westward, were Europeanized a hundred and fifty years ago and resemble Russian peasants more than they do their cousins the Eskimo.

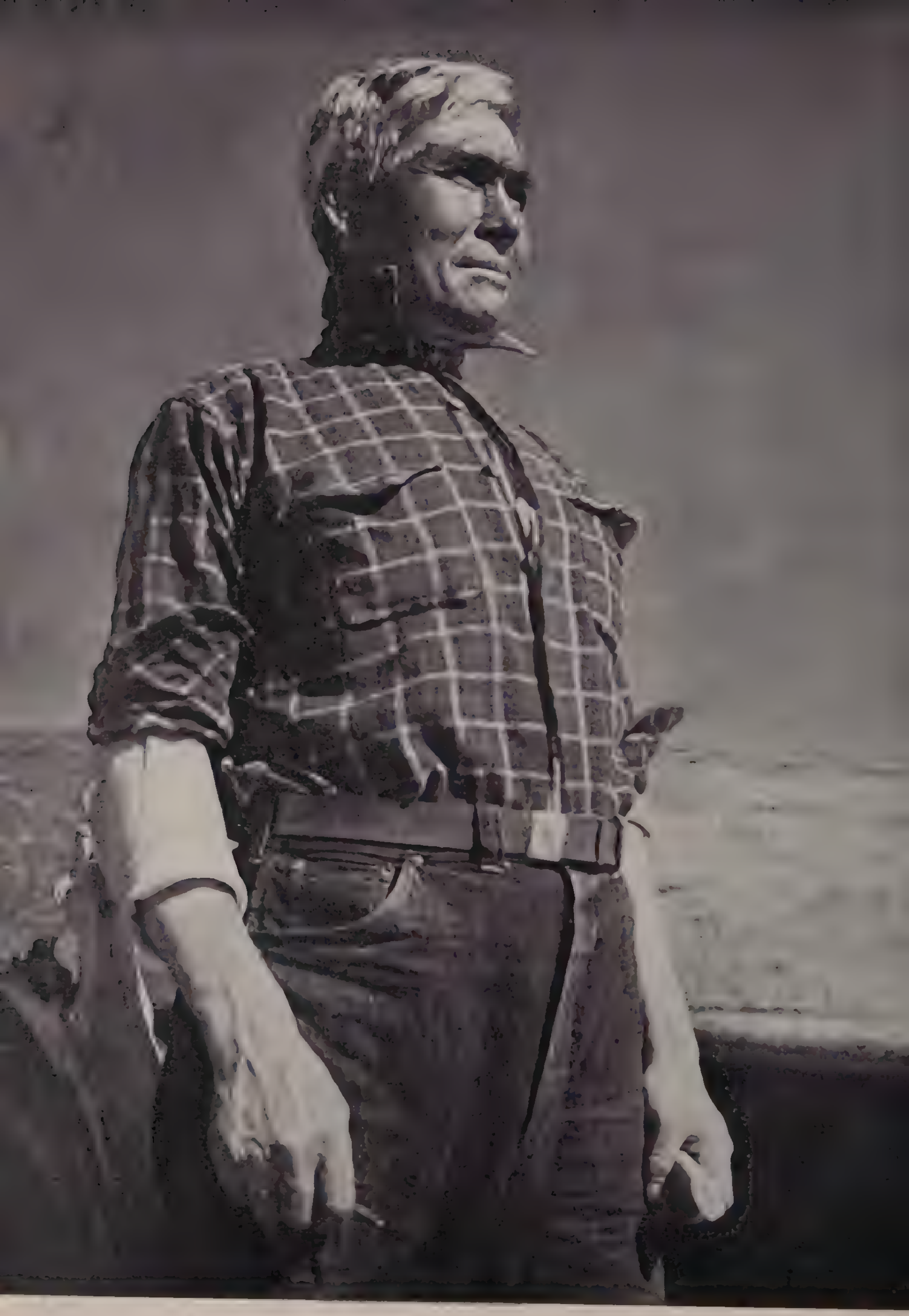
The great race of southeastern Alaska was the Tlingit. Before the arrival of the white man Haida Indians from Queen Charlotte Sound had entered Tlingit country and Tsimshians from British Columbia came to Metlakatla with Father Duncan in 1887. Such distinguishing marks as once existed among these tribes have practically disappeared under white civilization. The Indians of southeastern Alaska today live by fishing. They work in the white man's canneries and factories and have lost many of their old crafts. The Bureau of Indian Affairs is attempting to revive these through its schools. The Indians of interior Alaska, the Tinneh, or Athapascans, are fur-trappers and reindeer herders but resemble the people of southeastern Alaska rather than the Eskimo.

Eskimo Child



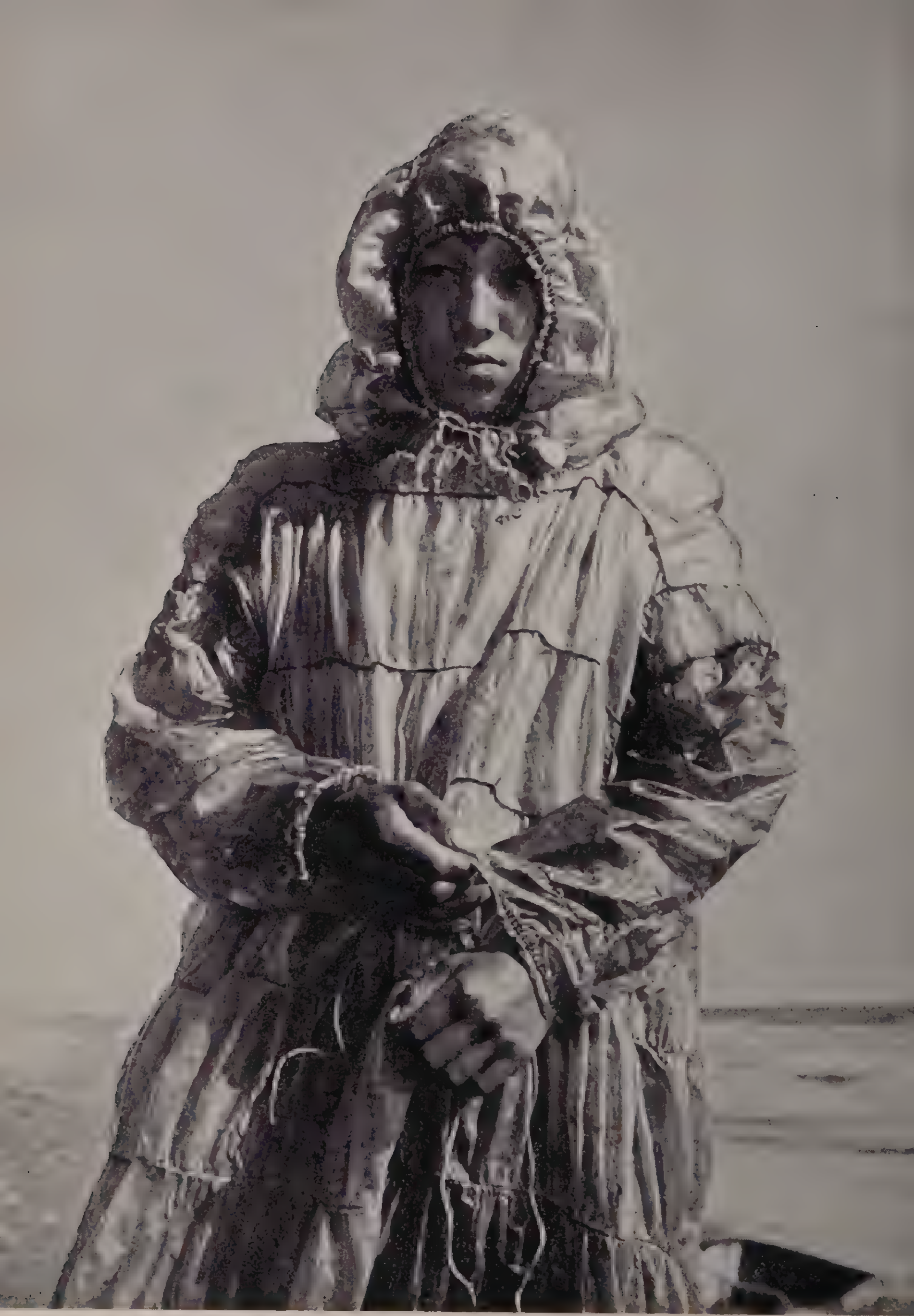
Tlingit Girl, Federal School at Juneau

Metlakatlan Wood Carver



Chief of the King Islanders

Eskimo Trader at Nome



Eskimo Wearing Intestine-Skin Parka

Eskimo in Kayak

King Islanders at Nome

very neat manner. When they go a-walking on the rocky beach they wear an awkward kind of boot, made of the throat of the sea lion, soled with thick sealskin, which they line with dry grass. The men wear a parka of bird skin, sometimes with the feathers outward and sometimes inward. The skin side is dyed red, and ornamented with slips of leather hanging down to a considerable length; the seams are covered with thin slips of skin, very elegantly embroidered with white deer's hair, goat's hair and the sinews of sea animals, dyed of different colors. They also wear tight pantaloons of white leather, and boots described to be worn by women at times: the men wear them when they go on foot; but in their baidars or their huts they are without either pantaloons or boots. The men have their hair cut short; the women wear theirs short before, combed over the forehead and tied in a club on the top of the head. In wet weather, or when out at sea, they wear a camley; which is a dress made in the shape of the other; but formed of the intestines of sea animals: the bladder of halibut, or the skin off the tongue of the whale. It has a hood to cover the head and ties close around the neck and wrists; so that no water can penetrate. It is nearly transparent, and looks pretty. The men wear also a wooden bonnet, ornamented with the whiskers of the sea lion and with beads, which make very pretty nodding plumes; and this serves to fasten the hood of their camley to the head. . . .

"Their instruments and utensils are all made with amazing beauty and the exactest symmetry; the needles with which they sew their clothes and embroidery are made of the wing bone of the gull, with a very nice cut around the thicker end, instead of an eye, to which they tie the thread so skillfully that it follows the needle without any obstruction. The thread they make of the sinews of the seal, and of all sizes, from the fineness of a hair to the strength of a moderate cord, both twisted and plaited cords. Their darts, to which they tie the gut of a seal blown out to serve as a float, are very beautifully ornamented with red downy feathers and goat's hair; as are also the different strings with which they fasten the wrists and other parts of their clothing. . . .

"Their darts are adapted with the greatest judgment to the different objects of the chase; for animals, a single barbed point; for birds, they are furnished with three points of light bone, spread and barbed; for seals, etc., they use a false point, inserted in a socket at the end of the dart, which parts on the least effort of the animal to dive, remaining in its body. A string of considerable length is fastened to this barbed point, and twisted around the wooden point of the dart; this serves as a float to direct them to the seal, which having a stick to drag after it, soon tires and becomes an easy prey. It however requires skill to humor it, perhaps equal to our angling. The boards used in throwing these darts are equally judicious, and enable the natives to cast them with great exactness to a considerable distance.

"The baidars or boats of Oonalashka are infinitely superior to those of any other island. If perfect symmetry, smoothness and proportion constitute beauty, they are beautiful; to me they appeared so beyond anything I have ever beheld. I have seen some of them as transparent as oiled paper, through which you could trace every formation of the inside, and the manner of the Natives sitting in it; whose light dress, pointed and plumed bonnet, together with his perfect ease and activity, added infinitely to its elegance. Their first appearance struck me with amazement beyond expression. We were in the offings, eight miles from shore, when they came about us. There was little wind, but a great swell of sea; some we took on board with their boats; and others continued rowing about the ships. Nearer in to the land we had a strong rippling current in our favor, at the rate of three and a half miles an hour, the sea breaking violently over the shoals, and on the rocks. The Natives, observing our astonishment at their agility and skill, paddled in among the breakers which reached to their breasts, and carried the baidars quite under the water, sporting about more like amphibious animals than human beings. . . ."

UNIMAK ISLAND (59pop.), the largest of the eastern Aleutians, lies immediately west of the Peninsula, and is about 65 miles long and 22 miles wide. On Unimak is magnificent MT. SHISHALDIN (9,387alt.) an active volcano sometimes known as Smoking Moses. With its snowy conical peak and the wreath of smoke that forever hangs about its summit it is said to resemble Fuji-no-Yama. Enormous rings, apparently several hundred feet in diameter and of remarkable symmetry and whiteness, may occasionally be seen emerging in puffs from the very top. The volcano has apparently been mildly active for the past one hundred and fifty years, for it was described by Sauer as "a perfect cone towering to an immense height, and discharging a considerable body of smoke from its summit." The crater is said by Father Hubbard, who visited it in 1934, to be only 100 feet in diameter, and plugged up almost to the rim with broken burned-out volcanic rock. On the western end of Unimak Island is Mt. Pogromni (6,500 alt.), the name meaning "desolation" in Russian, a smaller and less active volcano. Twenty-five miles southeast of Unimak is Sanak Island, 12 miles long, on which are the Native fishing villages of Sanak (p.o., 32 pop.) and Pavlof (42 pop.). Fox breeding is carried on in neighboring islands. Not a bush or a tree grows on the island—one year a Christmas tree was improvised by the local schoolteacher from a broken oar around which vines were twined, with sticks of candy serving for candles. Sanak Peak is 1,700 feet high. Cook was becalmed here June 21, and in three hours his party caught more than 100 halibut weighing 20 to 100 pounds each. Cook then named it Halibut Island.

In good weather steamers pause at Scotch Cap (so named because it resembles a Scottish bonnet in profile) to leave supplies for the lighthouse. Scotch Cap Light on the Pacific Ocean side and Sarichef Light on the Bering Sea side are both on the southern end of Unimak Island. At each place may be seen three houses, fitted up for three keepers and their families. The story goes that in former years the keepers had their wives with them, but that the ladies could not adjust their social differences and so were returned to civilization. At any rate, the population at each lighthouse is three males. Only under the most favorable weather conditions can mail and supplies be landed by lifeboats, and sometimes in winter three months go by before a landing can be made.

Akutan Island, the largest of the Krenitzin group, about 45 miles northeast of Unalaska, has a peak of the same name (4,100 alt.)—an active volcano. On the north shore of the island is a village that can be smelled before it is seen, Akutan (71 pop.), the site of a whaling station maintained by the American Pacific Whaling Company. Here oil from whales is refined to make soap for beautiful women, a cooking oil, and a fine lubricating oil for airplane motors. In a good season two hundred or more whales are caught by boats operating from this station.

As soon as a whale is sighted from the lookout mast of the steam whaling vessel, the vessel is brought within range, and a harpoon to which is attached a time bomb is fired at the whale. On the shaft of the harpoon are barbs that expand on entering the whale's body, and the bomb also explodes inside the whale, which "sounds," seeking the lower depths, or sometimes tows the ship several miles before weakening. As soon as the line attached to the harpoon slackens, it is snubbed around a heavy steam winch, and the wounded whale played much in the manner that a big fish is played by an angler. At last the whale rises to the surface, lashing the water into foam with his tail. Should he blow blood from his nostrils when he emerges, the whalers know that he is mortally wounded and wait for him to die. If he blows clear vapor, the "pram," a peculiar spoon-shaped boat, is lowered and rowed alongside the whale and a long lance is driven into him until he blows blood. The body of the whale is brought alongside, and in order to make it more buoyant, air is pumped into the abdominal cavity.

At the station, the carcass is hauled out of the water by a powerful steam winch. As soon as it is in place, men with longhandled knives begin to strip off the blubber, that is then chopped into slices and dropped into an elevator to be hoisted into blubber pots, where the oil is tried out by steam pipes running through the pots. After the blubber is exhausted of oil, it is conveyed to drainage tanks, then to the dryer, where, mixed with the residue of the meat, it is shredded and ground into fertilizer. After the blubber is removed from the carcass, the inside fat is taken out by chopping through the ribs, and the carcass is hauled up on the platform, where another gang of men removes the meat from the skeleton. The meat resembles beef in texture and flavor and is eaten at the station daily, and long strips of it are dried for winter dog food. It is boiled in the pots like the blubber, and the oil is extracted by an acid process. The blubber oil is ready for barreling when cold; but the meat oil has to be cleansed and clarified. The only part of the animal discarded is precisely the part once so valuable—the gill bones from which were once manufactured buggy whips and stays for women's corsets. On BABY ISLAND, in dangerous AKUTAN PASS, the little schooner *Abbie M. Deering* of Gloucester, which Kipling described in *Captains Courageous* as the *We're Here,* was wrecked in 1903 on her way from Seattle to Nome. The passengers and crew, thirty-nine in all, escaped to the island, from which they were rescued by the coastguard cutter *Manning.* Here in this northern weatherkitchen the warm air of the Japan Current is mixed with the heavy, cold air of Bering Sea and creates clockwise-moving storms that have an important effect on the climate of the United States.

Unalaska Island, the largest and most important of the eastern Aleutians, about 67 miles long and 30 miles at its greatest width, extends in a northeast-southwest direction. According to Father Veniaminof, the Natives called it A'uan Alaksha, this main or great land. It was discovered by the Russians in about 1759, when Stephen Golottof, placed in charge of the *Julian* by Nikifor, a Moscow merchant, came to Umnak and later to Unalaska. He was soon followed by Promyshleniki, who committed such cruelties on the Natives that the inhabitants of Umnak and Unalaska revolted in 1762, destroyed three vessels, and killed many hunters. In revenge Solovief, known as "the terrible," killed some 3,000 Aleuts, tying them back to back and shooting two men with the same bullet, or blowing up a group with gunpowder. Their spirit broken, the Aleuts never again attempted to throw off the yoke of their Russian masters. "Before the Russians came," recorded Father Veniaminof, "there were on this island 24 settlements, and altogether a great many people. Even as late as 1805, there were 15 counted settlements, and in them 800 souls; but at present (1834) there are only 10, and in them only 470."

From 1743 to 1799 the Russians alone took out of Alaska 186,754 recorded otter skins, besides many others unrecorded. After Cook's voyage to the north Pacific, trading vessels from England, Flanders, France, and California appeared in these waters, and for a long time Unalaska was the capital of the Alaska-China fur trade. In 1798 a combination of Russian fur companies was organized to resist foreign competition, and the following year it received a charter authorizing it to do business under the name of the Russian America Company. By that time the seat of the company had been transferred to Kodiak as furs became scarcer to westward, and later it was transferred to Sitka in southeastern Alaska.

The village of Unalaska (p.o., 356 pop. est. 1938), at the head of Iliuliuk Harbor, was founded by Solovief as a fur-trading station between 1760 and 1770. It was named Iliuliuk, said to mean "harmony" or "good understanding," but more probably simply "curving beach." The village itself consists of a few houses and stores along a crescent beach, the gently rolling mossy tundra immediately behind, and on all sides dark mountains, the highest peak of which is Mt. Makushin (5,691 alt.). First a fur capital in the eighteenth century, the town became during the Klondike rush in 1898 a halfway station for ships plying between Seattle, the Klondike, and Nome; and fuel and food supplies were stored here for emergency use. Later Unalaska declined in commercial importance, and today its major source of income is from the crews of American vessels that anchor at the naval base. A reservation of 64,640 acres has been set aside for the United States Navy, a seaplane base is to be established, and also a base for war vessels that would be capable of expansion in an emergency.

Unalaska has an incomparable location as a strategic key position in the north Pacific. A fleet based at Unalaska is in the most powerful position for either offensive or defensive operations at any place in the Pacific—to prevent an attack on the West Coast, the Philippines, or Honolulu, and to intercept or destroy a fleet attempting to attack the Panama Canal. By mining the passes between the islands, Bering Sea could be made a closed area, and Bristol Bay could shelter a fleet of any size.

Father Veniaminof records in 1834 that a "wooden church, provided with bells, and pictures in gilt frames" was built by the Aleuts in 1826. Some of the old Russian religious paintings referred to remain on the walls of the present church. Twenty-seven huts, belonging to the "creoles" (those of mixed Aleut and Russian blood) and the Aleuts, stood at Unalaska at that time, near the warehouses and offices of the Russian America Company, then the head office of the district. These huts and their inhabitants were thus described by Sarychev in 1806: "The huts are covered with grass and mud, and instead of a door an opening, which is too low to enter without stooping. From this opening you ascend by a beam, that serves for stairs, into the interior of the hut; where close by the walls, divisions are set apart for each family, and the floors are covered with rush mats, which serve for beds. Each female occupies a distinct division, and is mostly busy in making mats, sacks or baskets, which task she executes with amazing dexterity. These baskets, etc., are made of the longest blades of grass previously dried, and for the finer work, split into slips. In this process she uses no other instrument but her fingers: with the nail of her forefinger, which she suffers to grow to a great length, until it is as sharp as a lancet, she not only parts the blades of grass, but also the sinews of animals, which she twists with her fingers alone into a beautifully fine and even thread for sewing their clothes. Their needles they make of the bones of fish, large or small as the work requires, and fasten their thread to them by tying. Whenever they get a steel needle, they immediately break off the eye, and rub it on the edge of a stone, till they have made a notch, where they can tie the thread in their usual way.

"It is worthy of remark that the stomachers of these women are as beautifully shaped and decorated as if they had been the workmanship of a European embroiderer. The stomacher is made of the skin of a bird's neck, stretched and prepared for the purpose, and ornamented with silk, or the hair of goats and horses interwoven with that of the reindeer, which latter appears like rows of small pearls. In a similar manner they decorate the holiday dresses, girdles and caps of their husbands. . . .

"When one of these Aleutians thus arrayed is seated in his baidar, there is something majestic in his appearance; but when he rises, he cuts a deplorable figure; and when he walks, he looks still more wretchedly, being disabled from continual sitting from straightening his feet or knees."

An excellent Native school is maintained here, by the Methodist Board of Home Missions. There is a well-equipped hospital operated by the Bureau of Indian Affairs. Some herring, halibut, and cod fishing is carried on by the Natives, and fur is raised on neighboring islands. There is a rifle range in the town, and a variety of fresh- and salt-water fishing places are 2 hours away. Telephone communication is maintained with Dutch Harbor. There is no roadhouse, but accommodations are sometimes provided by the Alaska Commercial Company, which maintains a trading post here.

DUTCH HARBOR (p.o., 17pop.) is a village on the harbor of the same name. The harbor is 1¾ miles long and ½ mile wide, on the eastern side of Umaknak Island, in Unalaska Bay, west of the Iliuliuk Bay. It was so called from the tradition that a Dutch vessel was the first to enter it, although early Russian navigators called it by its Native name of Udakta. At one time a flourishing settlement and the capital of the fursealing industry, it has today scarcely more than a trading post, a few warehouses, and the house of the operators of the naval radio station located here.

West of Unalaska Island is UMNAK ISLAND, one of the principal islands of the Aleutians, about 70 miles long and 15 miles at its greatest width. On it is MT. VSEVIDOF (7,236alt.), a volcano. On Umnak, Carlyle Eubank, a native of Utah, operates a sheep ranch of about 15,000 head, maintained by a foreman and a crew of about six men. In 1937 the flock yielded some 120,000 pounds of wool. The only creatures that prey on the sheep are the huge ravens, that pick out the animals' eyes and then feast when the blinded sheep fall into gullies. Seen from the deck of a ship, with no houses or buildings to give perspective, the wooly white sheep moving against the brilliant green of the grasses look like termites crawling across a billiard table. The ranch began as a much more ambitious affair when it was operated by A. F. MacIntosh, who hoped that his flock would increase to 150,000.

West of Umnak stretch, for over 800 miles, the rest of the Aleutians, many with unnamed rivers and peaks, some with active volcanoes, for the most part uninhabited, but where a few Natives and an occasional white, breed foxes. Next to Umnak are the desolate uninhabited Islands of Four Mountains, their great cones almost perfect in form. The most southeastern, CHUGINADAK (5,291 alt.) is also the largest of the group. HERBERT ISLAND was named in 1894 after the then secretary of the navy, Hilary Abner Herbert. The northernmost of this group is ULIAGA, where in 1764 "a small settlement of thieving, quarrelsome people in the southeast part of the island" was exterminated by Golottof at the request of the Umnak Aleuts. AMUKTA PASS, marking off this group from the next westward group, the Andreanof Islands, was called by American whalers "Seventy-Second Pass" from its position near the 172nd Meridian. SEGUAM is the easternmost of the Andreanof group. CHAGULAK, one of the Islands of Four Mountains (4,300 alt.), appears on many maps as Chugul Island. In order to avoid the confusion arising from the presence in the Aleutian chain of three islands all named Chugul, two of these have been changed to CHAGULAK (long. 171° 10′) and SEGULA (long. 178° 09′), variants of the Native name of CHUGUL (long. 175° 52′). On ATKA ISLAND (p.o., 103 pop.), on which is KOROVIN VOLCANO (4,988 alt.), is a small settlement, largely Native, with a general store, a Native school, and a Russian Orthodox church. Here and at Attu are made the beautiful Aleutian baskets. The population of the village consists of three whites and about seventy Aleuts whose only sources of income are fox trapping and basketry. Before the Russians arrived, the basis of Native economy was the sea otter. After the extermination of their means of subsistence and nearly a century of rapine and murder practiced on the defenseless Aleuts, the few Natives that remain are isolated from the rest of the world, and almost forgotten by it, save for the regular calls of coast-guard vessels and the occasional appearance of a freighter. Adak (5,678 alt.), one of the larger islands in the Andreanof group, is the Aleut word for "crab," also "father." The next westward group is the Rat Islands, so called from the early days of Russian exploration, probably because of the abundance of small rodents and the absence of larger mammals. Last of all are Agattu and Attu (3,084 alt.), the latter the westernmost of the Aleutians belonging to the United States and "the lonesomest spot this side of hell." Attu has an excellent harbor, though with a dangerous entrance, and on the island is situated a small village, with a population of about fifty Natives and two whites. Here, as at Atka, the Natives live by selling fox skins and the exquisite Aleut baskets. The women gather beach grass in the fall, when it begins to turn yellow, split it into thin strands, and bleach it. The process of making the baskets is a long and tedious one. The women keep the strands moist in a damp rag, weaving them together with threads of embroidery silk into watertight vessels decorated with traditional symbols. The weaving is so fine that the makers, living in the Native *barabaras,* (sod houses somewhere between a dog house and a pig sty in size and comfort) often become nearly blind. A fine Aleut basket may take several years to weave, and brings as much as one hundred dollars in southeastern Alaska.

West of Attu is Copper Island, one of the Komandorski group, a possession of the USSR. On this barren, harborless island are great outcrops of almost pure copper ore, very much like the rich ore that appears in some of the Alaska copper mines. The Natives are given a small allowance in return for policing and patrolling the rookeries where the seal come to breed. In addition, the Natives trap foxes and raise small herds of cattle that feed on seaweed and fish, and give milk with a strong fish taste. The last of the Aleutians is Bering Island, also part of the Komandorski group. On its northwest corner is the grave of Vitus Bering, the first explorer of Alaska, who died on the island in 1741 before the conclusion of his third voyage.

Leaving Umnak, steamers may turn northeastward toward Bristol Bay, passing on the left Bogoslov Island, about 35 miles northwest of Unalaska. Every traveler sighting the group returns with a different story. Discrepancies in descriptions of the place are the fault not of the travelers but of the islands themselves, which are in a state of volcanic formation. This jack-in-the-box of the sea suddenly appeared above the surface in 1796. In 1883 a second island appeared—until 1890 connected with the first by a spit—a third, in 1906, and a fourth, in 1907. A year later the last two blew up and in 1909 were replaced by two others. Thus Bogoslov is a scattered group of small islands being changed in number and shape by frequent eruptions. At the west end are two pinnacles (alt. about 400) noted when the island was first discovered, which alone have not materially changed. The crater is at sea level and is full of burned rocks, partly-cooled lava, and great chunks of sulphur. East of the crater is a deep lagoon with a sand bottom—an excellent anchorage for a vessel, provided its master is willing to take the risk of being blown skyhigh without warning. Bogoslov Island is one of the larger sea-lion rookeries in the North. Homer W. Jewell, of the Biological Survey, who has visited here several times says, "Each time we ventured on the island we found thousands of birds nesting, the young of which were scrambling around under our feet."

Some 200 miles north of Unalaska on the 170th parallel lie the PRIBILOF ISLANDS (open to visitors only by special permission from the Bureau of Fisheries). This famous fur-seal reservation consists of two larger islands, ST. PAUL, about 35 square miles, and ST. GEORGE, about 27 square miles, each with a village of the same name; and two mere fly specks on the map, WALRUS and OTTER islands. Here for centuries seals have come to breed and hunters have killed them for their fur. The herd was nearing extinction in 1910, when it numbered only 130,000, but through the care and scientific management of the Bureau of Fisheries, which took charge of the islands in 1911, the herd has increased by about eight percent a year, and in 1937 numbered over 1,839,000.

The Pribilofs were first visited by Gerasim Pribilof, navigator for a Russian fur company on June 12, 1786. He named the island for his ship, the *St. George,* and the other for the day on which it was sighted—June 29, 1787, St. Peter's and St. Paul's Day by the Julian calendar. The name was later shortened to St. Paul. Sarychef's account, although contemporary, errs as to details of distance and time:

"The vacant sturman's place, caused by the death of Mr. Bronnikoff at Oknotsk, was supplied by Mr. Pribuloff, who accompanied a trader's vessel three years back on the part of the government to collect tribute. At the same time he took charge of the vessel as commander on the part of the trading company; for which he received a share in the profits of the voyage. He made Oonalashka, and from his former observations that numbers of sea animals, particularly young kotic, came from the north in the autumn at the beginning of severe weather, he had formed the opinion that some unknown island lay at no great distance in that direction; and he therefore resolved without losing time to take on board as many islanders as he could obtain, with their small canoes and arms, and be convinced of the certainty or uncertainty of his opinion.

"Twenty-four hours after he left Oonalashka he discovered land. The southern and western parts are surrounded by rocks; but the north is easy of approach, and affords good anchorage in a commodious bay for small vessels, not drawing over eight or nine feet of water. The whole island is volcanic, destitute of inhabitants, and only produces bulbs, plants, and berries which are to be met with on all the Aleutian Islands. They found the low lands and surrounding rocks covered with sea animals, particularly ursine seals and the sea lions; and with the skins of these animals they nearly loaded their vessel. Pribiloff called this St. George's Island; and observing another island to the north at a distance of 44 miles, he went thither in a large baidar, accompanied by a number of Aleutes. This island is much smaller than St. George's, and he named it St. Paul's; this, as well as the former, was the retreat of immense herds of seals. On St. George's Island they passed the winter, and found the inland parts over-run with foxes, who afforded them a profitable chase. It also abounded with the tusks of the walross, which they picked up on the shores."

The islands are volcanic in origin. Fog envelops them nine days out of ten in summer. Their cool, moist, summers and their well-drained, broken rocks affording protection from the sea and weather are exactly suited to the habits of the seal, which needs just such a climate and grounds for its breeding period. Spring and autumn do not exist—there are two seasons: the foggy, wet summer and dry, windy winter. The average winter temperature is 22° to 26° above zero, the summer temperature about 46° to 50°, with the thermometer occasionally rising as high as 64° in July—the warmest month. During the summer the islands are covered with a vivid coat of grasses and moss, so green that it gives a deep tint to noonday shadows, contrasting vividly with the reds, russets, lemon-yellows, grays, and pinks of the various plants and flowering annuals. The only fruit growing on the island is edible berries. St. Paul, its highest elevation 150 feet, consists of uplands, rugged hills, smooth volcanic cones, and a sandy beach. On St. George a bluff wall rises from the sea to a sheer height of 920 feet, and upon its innumerable shelf-margins breed millions of waterfowl. Otter Island, 6 miles southwest of the reef St. Paul, is a bare, bluffy islet with a single funnel-shaped crater, inhabited by many blue foxes and visited by many thousands of bachelor seals and millions of water birds. Walrus Island, 6 miles east from the northeast point of St. Paul, is a small rock, dangerous to shipping, with sparse grass in its central portions, visited by many male walrus and the breeding place of tens of thousands of waterfowl.

When the Pribilofs were discovered there were no human inhabitants, so the Russians transferred a number of Aleuts there to help in hunting the seal. When Alaska was purchased by the United States in 1867 there were still millions of seals, but because of the uncontrolled taking of skins they dwindled in the next two generations perilously close to extinction. An agreement between the United States, Great Britain, Russia, and Japan was concluded in 1911 to prohibit the killing of fur seals while in the water (pelagic hunting) and to place the legitimate killing of surplus male seals under the direct control of the governments interested. By this international agreement no fur seals may be taken in the North Pacific Ocean and Bering Sea save by the aborigines, who may hunt them only with primitive weapons from unpowered boats; and the killing of seals on the Pribilofs is carried on by the United States through the Bureau of Fisheries, which yearly selects surplus males of a certain age group for killing, and makes an annual census of the herd. Fifteen percent, either in skins or in proceeds of sale, is delivered to Great Britain and a like amount to Japan, as their shares under treaty provisions. Before sale, the government-owned sealskins are dressed, dyed, machined, and finished, so that when they pass into the hands of the public they are ready for making into garments. Public auctions are held for the account of the government by the Fouke Fur Company of St. Louis, Missouri, which processes the skins under contract with the government. The carcasses are manufactured into meal and oil. Protection of the seal herd is effected by a patrol of coast guard and

Bureau of Fisheries' vessels. During the winter, when sealing is at a standstill, the Natives trap foxes, obtaining approximately 1,000 pelts each season.

The 412 Natives of the Pribilofs are virtual wards of the government, which provides them with food, clothing, shelter, schooling, and medical attention, as well as some cash compensation, in return for their work in taking the fur seal and fox. The Bureau of Fisheries builds houses and schools, transports and distributes supplies, furnishes doctors, dentists, and schoolteachers, constructs roads, and acts as banker for the Natives. The Bureau employs two teachers on each of the two larger islands, and all children from six to sixteen are required to attend school. The Native workmen are divided into classes according to their ability to perform different tasks, and wages are fixed accordingly. In 1937 over 55,000 sealskins were taken, valued at over $251,000. In the twenty fiscal years from 1918-1937, inclusive, a net profit was made of over $2,200,000, in spite of heavy expenditures for a large reconstruction program that improved the living conditions of the Natives and the technical efficiency of the work.

Three important herds of fur seals inhabit the North Pacific and represent three distinct but closely related species: the Alaskan, Russian, and Japanese. The Alaska species (*callorhinus ursinus*) is the most numerous and the finest in quality of fur. As its scientific name hints, the fur seal resembles the bear, and is really a kind of sea bear. The adult males are called bulls, the adult females, cows, the newly born are pups, and the young males, bachelors. There are no old maids. A seal family consists of a bull and any number of cows, called a harem, up to fifty. The full-grown male, measuring 6 to 7 feet long and weighing 400 pounds or more, is a ferocious fighter and protects his family against other seals or human danger. The female weighs only about 80 pounds.

Each May a few pioneer males arrive on the Pribilofs. With the arrival of the June fogs males begin arriving by the thousands and fight for the best positions on the beach, their hoarse roars and sibilant whistles audible six miles away. Between June 12 and 14, as a rule, the cows, much smaller and gentler than the males, make their appearance. The bulls choose their harems and take up their position with their families on the rookeries. The bachelor seals are not allowed to approach the cows, but take up their stations away from the rookeries. The younger bachelors frolic and lope over the sand incessantly, without growling or biting, or leap into the sea for a session of sea tag. The older bachelors, approaching seven years, fight among themselves and occasionally battle the bulls in an effort to take their harems.

Two days after they arrive at the rookeries the cows, having been mated in the rookeries the previous year, give birth to their pups. After ten or twelve days of suckling their pups the cows return to the water, and after washing and playing around the islands, begin to make regular feeding trips of three or four days, at intervals of five or ten days, gorging themselves on squid, herring, salmon, and other fish. The bulls remain on the islands watching over the pups without eating or drinking, living on the fat they stored up during the winter. The bachelors, needing less food than the cows, spend most of their time sleeping on land or playing in the water instead of going on food trips. When the cold weather begins, the cows and their pups leave the islands together. Up to now the pups have been fed only by their mothers, who at last begin to teach them to catch fish for themselves. A little later most of the bachelors and bulls leave the Pribilofs, the latter thin and weak from their long fast and lousy from their long stay on the rookeries. In November and December the seals reappear off the coast of southern California, where they remain until time to make their long journey northward in March. In mild seasons a few of the males remain all winter on the Pribilofs.

Only the bachelor seals are killed. The Natives approach slyly between the dozing bachelors and the surf, and with clubs drive them like so many sheep over to the killing grounds. Here the bachelors are skinned, the fur processed, and the carcasses made into meal and oil.

The walrus, found mostly on Walrus Island, is but rarely taken for its meat, which is strong and rancid. Its hide, heavy and strong, is used for the skin-covered *bidarkas* or *kayaks* by the Eskimos, and will withstand thumping and pounding on the rocks and alongside ships where wooden or even metal boats will fill and sink. The skin is also used in making heavy walking-shoes. From the ivory tusks are carved articles of use and trinkets for tourists.

The north shore of the Alaska Peninsula, which steamers skirt on their way to Bristol Bay, is largely uninhabited, although sites of early villages of the Aleuts indicate that it was once thickly settled. As the warm waters of the Japan Current give way to the cold Bering Sea, the air becomes appreciably colder and the sea rougher.

On a journey to Alaska in 1899, John Burroughs refused to brave the Bering Sea until persuaded by John Muir, a fellow-scientist of the Harriman Expedition.

But the waves won't keep level,
They keep only mad revel;
My poor head is aching
And every nerve quaking,
And oh, my interior
Grows queerier, queerier,

Muir quotes Burroughs as remonstrating.

After a voyage of some 15 days out of Seward, steamers arrive at the town of DILLINGHAM in Nushagak Bay (see Part II, 8).

8. BRISTOL BAY AND THE KUSKOKWIM COUNTRY

DILLINGHAM—PLATINUM—BETHEL—NUNIVAK ISLAND—FLAT—IDITAROD—McGRATH—TAKOTNA.

Like many other remote areas in Alaska, Bristol Bay is a workroom rather than a playground, so that transportation is limited. The usual method of reaching Bristol Bay was until 1938 to make a two-week journey on the passenger steamer *Starr*. The quickest method is to fly from Anchorage or Fairbanks. Once during the summer, and often twice, a freight and passenger vessel puts into Bethel, direct from Seward, touching at Unalaska. There may soon be put in operation on a regular schedule a 22-passenger twin-hulled Savoia-Marchetti flying boat from Seattle to Nome via Unalaska, Dillingham, and Bethel, which would make it possible for tourists to visit conveniently the Aleutians, Bristol Bay, and the Kuskokwim country. In winter Bristol Bay freezes, and there is no means of transportation save by plane or dog team.

BRISTOL BAY

THE SHALLOW WATERS of Bristol Bay, named by Captain Cook in 1778 in honor of the Admiral, the Earl of Bristol, are one of the greatest salmon-fishing areas of the world. Into this arm of the Bering Sea, at no place more than 300 feet deep, millions of salmon swim in the late summer and fall on their way to spawn in its tributary rivers and lakes.

Five kinds of salmon spawn in Alaska waters. The largest is the king salmon, known as the chinook on the Columbia River and as the spring salmon on Puget Sound. The king salmon has been known to weigh one hundred pounds, but the average specimen weighs about twenty-two pounds and is a beautiful silver with round black spots on the back, tail and dorsal fin. Its life span is from four to ten years. Its flesh ranges from red to white, separates in large flakes, has a soft texture and an abundance of oil. The Alaska red salmon, known as the sockeye on Puget Sound and the blueback on the Columbia River, has a blue tint on its back above the silver. It weighs around seven pounds and lives from five to six years in Alaska, but only four years in southern waters. This variety prefers rivers that have their headwaters in lakes, or that have lakes along their courses. Its flesh is a deep red, with much oil, and flakes in small pieces. The coho, silver, or medium red salmon is a silvery color merging into green on the back with faint black spots. It usually weighs about eight pounds, but some have been caught that weigh as much as thirty. Its life period is uniformly three years. It is less red than the Alaska red, but its flesh is firm and good. The pink salmon is the smallest and most numerous of the species, bluish above, silvery below, with many round black spots on the upper part and a few large black spots on the tail. The average weight is two pounds, and its life period is invariably two years. Its flesh has a delicate flavor and fine texture, but its abundance and its pale color bring the price very low. The chum, or keta, is silvery on the sides and sometimes sprinkled with small black specks and faint traces of gridlike bars that become more distinct as the sides become red with the advance of the spawning season. The average weight is nine pounds, and its life period three, four, or five years. It is the cheapest of all salmon, primarily because of the pale color of its flesh and because it is sometimes low in oil. According to official tests, the paler-fleshed salmon are just as palatable and nutritious as the red-fleshed varieties.

The salmon is hatched in fresh water where it remains for a couple of years and then descends to the sea. At the time of their migration they are still only a few inches long, but they grow rapidly in salt water, and two or three years later, now fully mature and weighing from five to eight pounds they return, each to its native stream or lake, to spawn and die.

During this spawning migration salmon are taken for commercial use. The fishing season is limited to the brief period from June 25 to July 25, and during these few days the canneries in the area, with a total equipment representing more than $20,000,000 in investment, take out annually salmon worth about $12,000,000 in manufactured value and give employment to over 8,000 cannery workers and fishermen. The stringent fishing regulations and the short season are designed to permit sufficient spawning salmon to escape the nets in order that the total number will not be decreased.

Alaska fishermen and cannery operators were dismayed when it became known that Japanese floating canneries were anchoring well beyond the three-mile limit and using great nets (through which no salmon could pass), each a mile or more in length and extending from the bottom of the sea to the surface. For two weeks after the opening of the fishing season of 1937 American fishermen in Bristol Bay got almost no salmon, and the few they got were net-marked, although later runs brought the season's pack to a good average. Reports came from isolated spots that the Japanese were camping on shore, shooting reindeer and exchanging whiskey for supplies with the Aleuts. Finally, with aerial photographs of Japanese canneries in action and affidavits proving the Japanese were doing commercial fishing, in season and out, and wreaking damage on the salmon migration, the full effect of which would not be apparent for several seasons, the fishermen prepared to take matters into their own hands. American fishing vessels threatened to arm their crews with high-powered rifles and ammunition at the beginning of the 1938 season. As a result, Japanese fishermen promised, through a representative of a Japanese fishing company in Seattle, to abide by the agreement of the Japanese government originally made in 1935. In that year the Japanese Diet made an appropriation for a three-year investigation of the possibilities of deep-sea fishing in the Bristol Bay area, promising, however, to do no commercial fishing during that period. The following year the *Hakuyo Maru,* a Japanese government ship, appeared in Bristol Bay with a group of scientists and, with the knowledge and permission of the United States government, carried on experimental operations, packing some six hundred cases of salmon. With the three-year investigation completed, Alaska fishermen are stoutly opposing a return of Japanese floating canneries, the operation of which would completely nullify the value of protective regulations imposed on American fishermen and probably bring the Bristol Bay salmon close to total extinction within ten years.

At a meeting of the Institute of Pacific Relations a Japanese scientist once remarked to an American member of the International Fisheries Commission, "You evidently think those salmon bear the Stars and Stripes on their backs." Since Bristol Bay has not been designated by the United States as a closed sea, foreign fishermen probably feel they have a certain technical justification in operating outside the three-mile limit. But with the entire salmon population of Bristol Bay threatened with extinction in the near future, Alaskans are answering the question, "Are Bristol Bay salmon United States citizens?" with a resounding "Yes!"

During the fishing season a fleet of ocean-going vessels, honorably retired from active service elsewhere in the world, anchors in Bristol Bay. Because of the small and scattered working population of Alaska, the canneries import workers for the fishing season on these boats, which are also their living quarters.

Entering Bristol Bay, the steamer passes UGASHIK (84pop.), a fishing village. PILOT POINT is a near-by post office. EGEGIK (p.o., 86pop.) is another fishing village on Egegik ("swift" in Aleut) River, that drains west from Becharof Lake, 36 miles long, named after a master of the Russian navy who was at Kodiak in 1788. A channel through the rapids at the head of the river was completed in 1938 at a cost of five thousand dollars. NAKNEK (p.o., 173pop.) is a fishing village in Kvichak Bay on Naknek River that drains Naknek Lake, between Becharof and Iliamna lakes. This village is the back door to Katmai National Monument, which includes part of Naknek Lake. KOGGIUNG (p.o.) and IGIUGIG (p.o., 100pop.) are settlements north of Naknek. The village of KVICHAK is on the river of the same name that drains Iliamna Lake to Bristol Bay. LAKE ILIAMNA, Alaska's largest lake, 60 miles long by 15 to 25 miles wide, said to be the haunt of a giant blackfish, Iliamna, that bites holes in Native canoes, is an unspoiled beauty spot full of giant trout. A 15-pound rainbow trout, measuring 33½ inches, caught in Newhalen River, in the Iliamna area, by Ray McDonald, is mounted and on exhibition in the offices of the *Alaska*

Sportsman in Ketchikan. Frederick Hollander, who caught a 16½-pound trout measuring 34¾ inches in this river, says the fish here are "prehistoric in size and unbelievably numerous." Midway on the southern bank of the lake is located a comfortable roadhouse. Six miles above the lake, on Iliamna River, is the Native village of ILIAMNA (p.o., 100 pop.). NONDALTON (p.o., 24 pop.) is on Clark Lake at the source of the Newhalen River. Sportsmen find the easiest way to approach these fishing grounds is to fly directly from Anchorage.

Many villages and canneries dot the shores of Bristol Bay and the banks of rivers emptying into it. The residents support themselves by fishing in summer and trapping in winter. NUSHAGAK (43 pop.) is a Native settlement at the mouth of the Nushagak River. Here in 1818 the Russians established a fortified trading post and called it Alexandrovsk, perhaps after Alexander Baranof who ordered it built. A Moravian mission (Carmel) was established near here at Kanulik late in the nineteenth century.

DILLINGHAM (p.o., 85 pop.) is dominated, both scenically and economically, by the huge cannery at the foot of the town, similar to many other huge red-leaded salmon canneries in Bristol Bay. During the 30-day salmon fishing season, the town is full of resident fishermen, fishermen from other parts of Alaska, and fishermen brought in by the Star fishing fleet from the West Coast. The canneries supply boats, nets, and credit to anybody who wants to fish, and schoolteachers, clerks, preachers, men, women, and children fish madly. Something of the old gold-rush flavor haunts the town during the fishing fever, and the local jailhouse is usually crowded. The marshal has a reputation of being very stern with the prisoners—he makes them catch salmon for dog food, haul coal and supplies, and if they don't return to the jailhouse by 9 P.M. they are locked out for the night. The only other arm of the law, beside the local game warden, who polices an area bigger than New England, is the floating court, which holds sessions once a year at ports on the Aleutians and Bristol Bay aboard a coastguard vessel, passing sentences on prisoners charged with serious crimes, and naturalizing new citizens.

At Dillingham there is a school, movie house, trading posts, two restaurants, but no hotel—the only lodging place is the Bunkhouse, for men only, built like the cabin of a ship, with tiers of wooden bunks. In the Bunkhouse is posted the following:

NOTICE

This Bunkhouse is erected to accommodate trappers, miners, fishermen, and travelers. When you register here we will try to make you as comfortable as possible, but in doing this we will need your cooperation in order to make it a success. Drunks who are inclined to get noisy or quarrelsome will not be tolerated. All unnecessary noise must cease at 11 P.M. *Someone may come here to sleep.* Day and night taxi-service. Special rates to Bunkhouse guests. Any correspondence or typing will be done by the undersigned at a reasonable price. Any grievance you may have with plumbing features, etc., let us know and if possible same will be rectified. L. E. Slumberger, Day & Night Clerk.

With only 5½ miles of road in the district, there are twenty-one automobiles in use. At KANAKANAK (p.o., 177 pop.), on this road, is a radio station, a hospital, and a school, the latter in process of being converted into a jailhouse. Besides serving as the metropolis of the Bristol Bay fishing area, Dillingham is also the center for the trappers up river. EKWOK (p.o., 25 pop.), ALEKNAGIK (p.o., 30 pop.) and CLARK'S POINT (p.o., 25 pop.) are villages in the Dillingham area.

The unfair system of employing contract labor, where a contractor supplies a given number of temporary laborers, mostly Mexicans, Filipinos and Chinese, to fishing companies in the Bristol Bay area, paying them miserably low wages, has been abolished, and labor is now employed directly by the companies themselves. The system of contract labor encouraged bad feeling between the Mexicans, Filipinos, Chinese, and whites, but the increasing organizations of the Bristol Bay cannery workers by the Alaska Cannery Workers Union on an industrial basis has done much to dissipate racial prejudice on both sides, as well as bettering working conditions in the area.

At Dillingham, freight and passenger vessels, unable to dock because of the lack of a harbor, unload by lighter.

DILLINGHAM TO BETHEL

No regular steamers operate between Dillingham and Bethel. Although there are no regularly scheduled planes, during good weather many planes arrive and depart from the mud flats of Dillingham to and from Goodnews Bay and Bethel. The traveler to Bethel should make arrangements with his pilot to pause at Goodnews Bay, scene of the latest mining rush—this time not gold but platinum. Planes used in summer in this area are all equipped with pontoons, and the pilot, with a book of tide-tables and with hip boots, carries his passengers to and from the plane pickaback.

TOGIAK (71 pop.) and MUMTRAK are Eskimo villages on Togiak Bay and Goodnews Bay, respectively. The post office is GOODNEWS BAY. The bay itself, which indents the coast a little south of the mouth of the Kuskokwim River, was so named by Sarichef in 1826. Lütke thought "it might better be called the 'Bay of False Reports.' "

PLATINUM (p.o., 50 pop. est. 1938) is at the foot of Red Mountain on the south spit of Goodnews Bay, which indents the mainland coast a little south of the mouth of the Kuskokwim River. Until the stampede of 1937, the village consisted only of a few Native huts and a trading post. It had in 1938 three stores, Berg's Roadhouse, the Stampede Inn, and a number of private houses and tents. Traces of platinum were first discovered on the south end of Red Mountain in what is now known as Fox Gulch in 1927 by an Eskimo, Johnnie Kilbuck, who announced that he had found "white gold"; and the first recorded production of platinum from Goodnews Bay was made in that year, consisting of 17½ ounces. Up to 1934, a total of some 3,000 ounces was mined, and about 8,000 ounces for each of the years 1935 and 1936. In 1937 platinum was worth forty-eight dollars an ounce.

On October 28, 1936, three Alaska miners who were hand-drilling a hole through beach gravels near the mouth of Goodnews River hit a serpentine bedrock at thirty-eight feet, with a heavy layer of platinum gravel said to be worth about three dollars a cubic yard. When the miners went Outside to get machinery to work their property, reporters picked up the story, snow-balled it, and a new Alaska stampede was born. Several miles were staked in the lower Goodnews River area, new prospectors arrived almost daily by plane from Anchorage and by private boat from Nushagak and Bethel, and tent cities sprang up at Platinum and at the old Native village of Mumtrak.

None of the lower river area can be prospected by pick and pan methods. Centuries of erosion have washed a heavy accumulation of sand and gravel from the hills and buried bedrock to depths of from forty to sixty feet under the surface. Since the water table there is close to surface, pumps and light power drills are a necessity.

The situation is different up-river, beyond the tidal flats where the river snakes a sluggish course between low grassy banks lined with willow and alder. Above this, where the current averages seven to eight miles an hour, the overburden decreases rapidly; so that along Bear and Watermuse creeks, from which much of the gold-platinum-osmiridium production came before 1938, bedrock lies at depths of but eighteen to twenty feet, down to twelve and even eight and six feet below the surface.

There are at least two other creeks in this district which have been producing gold and platinum, with some osmiridium (a combination of osmium and iridium, worth about $110 an ounce) from their placers. Westward over a low divide is the Arolic River, where placers were first worked on Butte Creek, in 1900, in Fox and Snow gulches, in 1906, and on Trail and Kowkow creeks about 1913.

The largest development program in the region is that of the Goodnews Bay Mining Company, which secured a $550,000 loan from the Reconstruction Finance Corporation and constructed a large dredge on the site of their operations in the summer of 1937.

The bedrock source of the platinum metals is yet to be found. A knowledge of the lode material from which the placers have been derived may lead to the discovery of new platinum placers, and possibly to the location of rich platinum lode deposits.

The Goodnews Bay area consists mostly of low, rolling hills, with neither brush nor trees, except along a few sheltered creek beds. The whole is covered with a mossy tundra, and during the summer months there is a wide variety of wild flowers. The soil is acid, and with the rainy and windy climate of the region, it is very unsatisfactory for agricultural purposes. There are large herds of reindeer, twenty-five thousand having been reported in the area. Ducks and geese of several species breed along the streams, where there are many mink, muskrat, and white and red foxes.

KWINHAGAK (p.o., 200pop. est. 1938) is an Eskimo village at the mouth of the Kanektok River. There is a Moravian mission here. BETHEL (p.o., 278pop., mostly Natives) lies near the mouth of the Kuskokwim River, a fishing and fur-raising settlement, and is in the center of an important mining district. A forty-two-bed hospital was erected here in 1938 by the Bureau of Indian Affairs. Bethel was founded in 1885 by William H. Weinland and John H. Kilbrick as a Moravian mission.

The great drainage basin of the Kuskokwim River is second only to the Yukon in size and in the importance of its mineral resources. There has been some mining in the region since 1900, but only in widely scattered spots, since its isolation and inaccessibility, before the wide use of planes, made exploration and development far too costly. Here, as in so many other remote areas of Alaska, pioneer prospectors have afforded about all the information available on what is one of the largest and most important undeveloped mineral areas in the Territory.

The high cost of mining has, up to the last few years, confined mining to the production of placer gold. Quicksilver ores have been known in the region since 1880, and they were examined to some extent before 1898, although there was no quicksilver output until about 1906. Placer gold was found and worked in the Goodnews area, in the shallow gravels of Butte Creek on the upper Arolic River, in 1900. From this point, prospecting continued northward, and placers were discovered all through a zone that extends north across the Kuskokwim at Georgetown to include the placers of Iditarod, Innoko, and Ruby.

THE BERING SEA COAST TO THE MOUTH OF THE YUKON

Every summer one or more vessels makes a special cruise to Bering Sea, but the coast and coastal country north of Bethel to the mouth of the Yukon is seldom visited.

Between the mouths of the Kuskokwim and the Yukon is a country full of sizable rivers and lakes, most of them unnamed, obviously owing their courses and outlines to the draftsman's squiggling pen, even on the latest maps. The district is little known and inhabited only by a few scattered Eskimo villages. At HOOPER BAY (p.o., 254pop. est. 1939) is a Native school and Catholic mission. Two boats call annually, one for the mission, one for the school. The town is known to the Eskimos as Napareyaramiut. KASHUNUK (163pop.) is a Native settlement and reindeer station. DALL LAKE, in the delta between the Yukon and Kuskokwim rivers, is drained by the uncharted Kinak River. The lake was named for William Healey Dall, dean of living Alaska explorers and historians. He went to Alaska in 1865 in the employ of the Western Union Telegraph Company. In 1871 he entered the Coast Survey, became a member of the Geological Survey in 1884, and was on the Harriman Expedition in 1889. Dall is the author of some fifty charts and plans issued by the Coast Survey and of *Alaska and Its Resources* and the *Alaska Coast Pilot.* NUNIVAK ISLAND, well below the delta of the Yukon and some distance above Kuskokwim Bay, was discovered by Vasilief in 1821. Etolin came upon it about the same time, and the northernmost point of the island bears his name. Etolin was governor of the Russian America Company, 1841-5, and one of the great explorers of the early nineteenth century. In 1882 he made a survey of the coast from Bristol Bay to Cape Newenham, and for eighty years his were the only charts covering this area. Nunivak is little visited by travelers. Over 50 miles long, most of the time fogbound, its climate is akin to Arctic islands hundreds of miles farther north. It has no trees, but is covered with lichens, sedges, and shrubs. About two hundred Natives live on Nunivak and make rather good black pottery and elaborate carvings in ivory, almost like small totem poles.

In the summer of 1936 a herd of musk ox numbering twenty-seven head, imported from Greenland, was transferred to the island and placed under the care of Paul Ivanof, the local trader. When the herd has increased to two hundred, it is planned to take selected groups, ship them northward, and scatter them throughout the polar regions where once their ancestors roamed in large numbers, to provide the Eskimos with a ready source of meat.

The musk ox, a tough and ornery critter, is one of the few animals of the north that can withstand the terrible charge of the Arctic wolf. A full-sized animal weighs from 500 to 600 pounds, has short legs, coarse wool overlaid with matted guard hair that grows to eighteen inches, a bony head with heavy curling horns, is absolutely untameable, and will eat the toughest brush that grows. Herds of cows up to thirty in number follow the leadership of the bull. Breeding takes place in August, and birth in April. After reaching the age of four, cows give birth to young in alternate years. The flesh is powerfully impregnated with the flavor of musk.

Prior to the repopulation measures taken by the Alaska Game Commission in cooperation with the Bureau of Biological Survey, the last musk ox in Alaska was killed at Barrow in 1865. For thousands of years these animals had been following the lip of the receding ice cap over the face of the hemisphere, from Kentucky to above the Arctic Circle. Once above the Circle they became the victims of isolated Eskimos, whalers, and predatory animals such as bears. Their place in the economic life of the Eskimo has been taken by the reindeer.

BETHEL TO FAIRBANKS BY PLANE

From Bethel, planes are regularly operated to Fairbanks, with a short stopover at McGrath (consult travel agents for current schedules).

AKIAK (p.o., 228 pop., mostly Natives) is 30 miles above Bethel on the Kuskokwim River. Seventy miles further is KALSKAG (p.o.). ANIAK (p.o.) is on the river of the same name, where gold was discovered by a Russian trader, Simensen Lukeen, in 1832. He built a fort twenty-five miles above the mouth of the Aniak River, which he called Yellow River. The fort was destroyed in 1841 and rebuilt by another Russian trader, Kamakoff. The Yellow River gold stampede occurred in 1906-10. NAPAMUTE (p.o., 111 pop.) is a Native village with a general store, 75 miles south of Iditarod, on the Kuskokwim. Further up the river are CROOKED CREEK (p.o.) and GEORGETOWN, SLEITMUT or SLEETMUTE (p.o.), mining and fur-breeding settlements. STONY RIVER (p.o., 7 pop.) is a trading post and outfitting point for trappers and prospectors on an island in the Kuskokwim at the mouth of Stony River. FLAT (p.o., 124 pop.) on the Iditarod River is a mining camp, with two general stores, several roadhouses, and a café. In 1937 the production of gold in this district totaled over $700,000. Flat claims a summer population of 350, and the residents say for themselves, "We aren't very good, because we have no church; we aren't very bad, because we have no jail." Sandy Smith, a prospector and trail blazer from the early days of the Klondike rush, established the Snyder House on Flat Creek, operated on a four-shift plan, the roomers getting six hours' sleep for $2.50. The enterprise was a success, and having made a large sum Sandy moved on to invest it in oil lands. The first strike in the district was made at IDITAROD (125 pop. est. 1938) on the Iditarod River, 300 miles above the junction of the Innoko and Yukon rivers, connected with Flat by boat during high water. In 1908 John Beaton and Harry Dyckman went up the Iditarod River and prospected several of the creeks in the area. Discovery Claim, staked by them on Christmas Day, proved to be among the best paying claims of the district. Several stampedes occurred in the area, especially after the discovery of rich ground near Flat in 1910. In 1912 Guggenheim interests put a dredge into service on Flat Creek, which in its first three months of operation recovered $440,000 worth of gold. This dredge continued operations until 1918, when it reached the townsite of Flat and was dismantled and shipped to the Malay Peninsula. Two other dredges were in operation in 1937 near Flat, and fifteen companies were operating with equipment ranging from large dredges to small hydraulic plants. Since the first strikes, about $30,000,000 worth of gold has been taken out of the district.

McGRATH (p.o., 112pop.) is at the confluence of the Kuskokwim and Takotna rivers, about 350 miles from the headwaters of the Kuskokwim. Mt. McGrath has an altitude of 6,170 feet. McGrath is the transfer point for freight bound for the upper Kuskokwim. Most planes flying out of Anchorage and Fairbanks to Bristol Bay, the Kuskokwim, and the lower Yukon country traverse McGrath. The airport is small, but planes sometimes use a bar on the Kuskokwim in summer and the frozen Takotna River in winter as landing fields. The principal activities of the settlement are freighting, mining, and trapping. A game warden is stationed permanently in an excellent building. There is a schoolhouse (attended by six pupils), four general stores, a sawmill, and a roadhouse. McGrath was settled by Abe Appel, who staked a trading site there in 1905. The Yellow River stampede of 1906 brought many persons to the Kuskokwim, and some of them settled in McGrath. There were remains of an old Indian village near by, but no Natives. One of the reasons perhaps was the absence of game. When an old Native was asked why the Natives had left, he replied, "Too much water all time—everybody die." Disastrous floods are common, and most of the residents on the Takotna River side of the town have to move to high ground almost every spring. A third of the population is itinerant, spending the spring and summer months in McGrath and trapping within a radius of from twenty to two hundred miles from the town in winter. FOLGER (p.o.) is a roadhouse a few miles from McGrath. MEDFRA (p.o., 24pop), 10 miles north of McGrath, is a center of mink and marten farms and has a general store. A road has been projected from McGrath to TAKOTNA (p.o., 65pop.), a mining camp on the river of the same name. OPHIR (p.o., pop. in 1938, 12 women and 2 children) is a summer mining camp a few miles north of Takotna. It is named for the region which supplied the gold for Solomon's temple.

9. SEWARD PENINSULA AND NORTHWESTERN ALASKA

St. Michael—Nome—St. Lawrence Island—King Island—Diomede Islands—Teller.

Upon the arrival at Marshall of the Alaska Railroad Yukon River steamer from Nenana, connection is made with a Northern Commercial Company boat running between Marshall and St. Michael. Steamer passage from St. Michael to Nome is infrequent, depending upon movement of freight.

ST. MICHAEL TO NOME

NORTON SOUND was explored and mapped by Captain James Cook in 1778. In 1883 Andrei Glazunof, born of a Russian father and an Aleut mother, conducted an overland expedition from Norton Sound to the Anvich River, thence down it to the Yukon.

St. Michael (p.o., 147pop., mostly Natives) is a port on St. Michael Island, 125 miles southeast of Nome, on Norton Sound. A fortified trading post called Redoubt St. Michael after Captain Michael Tebenkof, later governor of the Russian America Company, who charted the vicinity in 1831, was established here in 1833. It has a Territorial school, a Roman Catholic church, two stores, and a roadhouse. About 65 miles north of St. Michael is UNALAKLEET (p.o., 261 pop., mostly Natives) on Unalakleet River. Fishing, trapping, and reindeer herding are the principal occupations of its inhabitants, who have increased to 355 since 1930. It has a Native school, a Swedish Lutheran mission church, a government nurse, a store, a roadhouse, reindeer corrals, commercial truck gardens, and an airport. A telephone line connects with Nulato on the Yukon River and a radio telephone maintains daily contact with the United States Signal Corps at Nome. The Unalakleet River furnishes good trout and salmon fishing. Natives celebrate the Fourth of July and New Year's Day by playing old Eskimo games. Still standing is part of an old blockhouse built when the village was established by Russians, shortly after an epidemic had practically wiped out the old village of Unalakleet, which was situated across the river from the present site. SHAKTOLIK (104pop.) is an Eskimo village at the mouth of Shaktolik River, 38 miles north of Unalakleet.

BESBORO ISLAND, in Norton Sound, named by Cook in 1778, is an uninhabited rock visible from the Fairbanks-Nome plane. North of Norton Bay on Dime Creek is HAYCOCK (p.o., 74pop., mostly Natives), a mining camp and fur-trapping village on Seward Peninsula, with a Territorial school. In 1822 the Russian explorers Etolin and Vasilief explored Norton Sound along its eastern and northern shore, naming GOLOVNIN BAY, on which is GOLOVNIN (p.o., 135pop., mostly Natives), about 90 miles east of Nome. This mining camp is situated in the rich Golovnin Bay mining district, has telephone connection with Nome, St. Michael and Council, an airport, a Territorial school, a roadhouse, a reindeer cold-storage plant and corrals, two herring salteries, and several stores. WHITE MOUNTAIN (p.o., 205pop.) is a fishing village on the Fish River near Golovnin Bay, with a Native day school, and a store. It has telephone service to Nome. About 65 miles east of Nome is BLUFF, a mining camp, where gold placer, gold quartz, and cinnabar mining are done. SOLOMON (p.o., 25pop. est. 1933) is a mining camp on the river of the same name, with a roadhouse and a store, the coast terminus and shipping point of Council. COUNCIL (p.o., 109pop. est. 1933) is the center of a rich placer-mining district and has a Territorial school, a store, and a roadhouse. A citizen of Council, who says that he is jokingly called the mayor, describes the village in December, 1938, as a ghost town, "slightly stirring since the price of gold went up or the price of money went down. We average twenty-five votes at election time, sometimes a few more when some are kind of imported for some good cause. Everybody does about as he pleases. As for transportation, our place is a kind of dogbus and horsebus and tractorbus station. We have a good landing port, for we built it. There is a roadhouse—dollar a night if you are not afraid in the dark. Dollar a meal. So much a drink—depending upon how many you have had or how drunk you are. If you like a decent place to eat and sleep, you can put up with us. Our rates are delightful, as we seldom charge. We have a telephone line to Nome: $15.50 a month to have the instrument in your home or shack, and you do all the servicing. If you still want to talk to Nome it will only cost you a toll of $2.50, plus 20 cents new tax. And you might have to wait two weeks before they fix the line, if it is down. The town has no cultural organizations, but there are a number of good books. Once a little paper was published under the name *Council City News*. Now the *Council City News* walks about on two honest old legs, doing no one any harm. In its heyday Council had fourteen big saloons with connected gambling places and brothels. All the famous citizens are dead or gone, some 'infamous' are still here. The chief annual event of interest is shooting out the old year and in the new. As for tours in the neighborhood—you can go out to any of the creeks and see any of the workings for gold. You can work for gold yourself, even. We will furnish you any needed and reasonable information when the time comes."

NOME AND VICINITY

The quickest and most convenient way of reaching northwestern Alaska is by plane from Fairbanks.

Several steamers serve Nome in summer, from Seattle by way of Unalaska. In winter all ports in northwestern Alaska are ice bound.

The climate of Seward Peninsula, in northwestern Alaska, is sharply divided into summer and winter, or the open and closed seasons. During October freezing weather begins, and by the end of that month harbors are frozen and navigation is closed until June. Winter temperatures run from 10° above to 20° below zero, and occasional cold snaps push the mercury to 35° below. Winter temperatures are steadier than in the midwestern states, thaws rarely occurring during winter. During the summer the weather is consistently warm but not hot, ranging from 45° to 75°.

The ground, perpetually frozen at a depth of from one to 2½ feet, is covered with weeds, sedge, and browse, with willows and alders along the creeks. Two hundred and seventy-eight named varieties of flowering plants are known within 50 miles of Nome, besides about 150 species of mosses, lichens, ferns, fungi and algae. Some timber is found on the peninsula, but none in the immediate vicinity of Nome.

Vitus Bering discovered and named St. Lawrence Island on St. Lawrence's Day, August 10, 1728. He sailed through Bering Strait, rounding East Cape, Siberia, and established the fact that the land east of Siberia was not part of Asia. He did not sight Alaska on this voyage, but Michael Gvozdef is supposed to have touched the continent in 1732. His journal contains an accurate description of the Diomede Islands and speaks of a continent to the east which his expedition skirted for several days, thinking it would prove to be an island. "The coast was sand and there were dwellings on the shore, and a number of people. There was also timber on this land, spruce, and earth." After sailing for five days the water became too shallow for the boats. It is only on Norton Sound that timber comes to the shore, and the shallow water beyond suggests the shoals of the Yukon River. Although Captain Cook explored the coast of Seward Peninsula in 1778, the interior was not penetrated to any great extent until the great gold rush of 1900.

NOME (p.o., 1500 pop. ⅔ white, est. 1938), a port on the south side of Seward Peninsula on the Bering Sea, 2,300 nautical miles from Seattle, 500 miles west of the Hawaiian Islands and 150 miles south of the Arctic Circle, is the metropolis of northwestern Alaska. A modern town with all conveniences, governored by a mayor and council, Nome lies at the very edge of a sloping beach, its front yard a bleak shore pounded by surf, its back yard consisting of mile upon mile of moss-covered tundra and low, rolling hills. The alternate thawing and freezing of the soil twists the underpinnings of the buildings and causes them to shift and lean, giving them an air of desolation even when they are fairly new. The sidewalks are all of plank, and the streets planked or graveled.

Since Nome is south of the Arctic Circle it does not lose sight of the sun in winter, nor does it have midnight sun in summer. In winter on the shortest day the sun is up a little less than four hours, and in summer on the longest day the sun is out of sight only a little over two hours. From the first days of May until the middle of August there is no darkness, and thus Nome has as many possible hours of sunlight as any part of continental United States, and more daylight a year than any.

Freight and passenger service is afforded by boat from Seattle and other districts in Alaska during the navigation season (June-October). Vessels make about eight or ten trips each summer, anchoring well off the shoal water near the town, which has no harbor. Commerce from Nome in 1936 amounted to 21,265 tons, valued at $4,796,000. Three airplane companies carry passengers, mail, and freight to and from Nome the year round, and for short hauls trucks and horses in summer and dog teams in winter are used. Since 1919, all road construction and repairs, as well as the staking of trails and the building of shelter cabins, has been done by the Alaska Road Commission. A highway has been proposed to reach from Nulato, on the Yukon River, to Teller by way of Nome. It is the dream of Donald McDonald, Alaska highway engineer, that this road may be extended to the International Highway on the southeast and cross Bering Strait on the northwest, linking New York and Paris by automobile road. Experts estimate that the journey from Juneau to Nome would today take 82 days by dog team, but nobody attempts the journey, travelers preferring to fly in two days, with an overnight stop at Fairbanks.

A new Federal building in Nome, completed at a total cost of $400,000 in 1938, houses the post office and many other Federal agencies stationed here at the headquarters of the Second Division. Nome's municipal affairs are under the direction of a mayor and council, supported by property taxation. Tourist information is supplied by the Northwestern Alaska Chamber of Commerce. The town maintains a fire and a police department, and has the benefit of such privately owned utilities as electricity, telephone, garbage service, and central steam heating. A graded public school and a high school are maintained by the city, and Native children have their own graded school under the Bureau of Indian Affairs. Nome operates a modern hospital. There is a Catholic and two Protestant churches—the former ministering to both whites and Natives, the latter divided into a Methodist Native church and a Federated Protestant white church. There are many clubs, lodges, and societies, a daily newspaper—the famous *Nome Nugget* (price 15 cents a copy, $2 monthly), a movie, a bank, several hotels, and a variety of stores, restaurants, and shops. An annual fair held during the latter part of March and the first days of April lasts for four days—and nights. There are exhibits of Native products, mining, household economics, handicraft and needlework, furs and fur-bearing animals, art, reindeer, flowers and vegetables, and many more. Visitors from all over Alaska attend the fair, taking advantage of special one-way rates for the round trip offered by the airplane companies. At Nome is also held the Farthest North Bench Show for Malemute and Siberian Dogs. During Fair Week occurs the famous All-Alaska Championship Dog Race (158 miles) from Nome to Golovnin and return. The record time for this race, 15 hrs., 13 min., 17 sec., was made by an Eskimo, Alfred Kiggatelluk.

The annual Dog Derby was initiated by "Scotty" Allen, former member of the Alaska Legislature and "the greatest dog-musher that ever swung on the handle bars of a sled," whose dog, Baldy, a famous Malemute, developed into one of the most intelligent, courageous and strongest lead dogs in Alaska. This race was from Nome to Candle and return, 408 miles over bleak, timberless country swept by sudden blizzards. The record time of 74 hrs., 14 min., 22 sec. was made by John Johnson, a Finn. It was a gruelling course; as much as a half-million dollars was bet on a single race; dishonest drivers doped competing dogs, crippled them with blankets lined with porcupine quills hidden in the snow, switched their own dogs; a telephone wire was strung along the entire course to announce the progress of the 25 or more contesting teams; a daily "dog-dope" sheet was published, and the entire camp went dog mad. Although the dog-racing fever has subsided like the gold fever, the modern race is a picturesque and exciting affair, from the moment when the Queen in her fur parka drops the starting flag until the end of the race, when drivers struggle in, perhaps harnessed to the sled with the huskies, pulling on the sled dead teammates, killed by the pace, that the rules of the race require the contestant to bring back.

In 1925, during the diphtheria epidemic at Nome, serum had to be carried from Nenana, 650 miles away, by relays of dog teams. The last stage into Nome was made by Balto, who thus became a world-famous dog. A monument was erected to him in Central Park, New

York City. Leonard Seppala, one of the great dog trainers of the north, who twice won the All-Alaska Sweepstakes, says that Balto was only a "newspaper hero," and that the true hero of that life-and-death race was Togo, who made the long run of over 200 miles.

The word *Nome* as the name of the town and neighboring cape is a draftsman's error. When the manuscript chart of the region was being prepared on board the British vessel *Herald* attention was drawn to the fact that the point had no name, and a mark (*? name*) was penciled against it. The chart was hurriedly inked in, the draftsman reading *? name* as *C. Nome,* and Cape Nome and Nome they have been ever since. This story is disputed by other authorities, who say it is a local Native name. The modern history of the region began when word went out in the fall of 1899, closely following the sensational gold discoveries made in Dawson, that fabulous deposits of gold had been found on Anvil Creek and on the seashore of Nome. In the spring a motley crowd of 10,000 prospectors and adventure-seekers from all over the world arrived at Nome, and their possessions were dumped on the beach. Every known device that had been invented for extracting gold appeared on Nome beach, most of them discarded in favor of the sourdough rocker, so that by the fall of 1900 there was enough rusting machinery lying on the beach to start a foundry. Many disillusioned fortune hunters left before the last return steamer departed in October, 1900, and the story is told of an excited stampeder who, as soon as the lighter touched the beach, jumped ashore, grabbed some sand in his fingers, and exclaimed, "I knew it was all a hoax!" He took the same lighter back to the boat, saying, "I'm glad to get out of the damned country."

Early arrivals in Nome found a few frame houses and many tents pitched on the strip of beach at the mouth of Snake River. From this point they spread in both directions for miles along the beach to a depth of 100 feet or so, and eagerly began to pan the sand for gold that had been brought down by the creeks for thousands of years. Scarcely had the latest arrivals settled down when, in September, an equinoctial storm broke—its technical name promptly attributed by the stampeders to a derivation from *unequaled* and *obnoxious*. The storm caught the stampeders unprepared, blew away their tents, and flung hams, coal-oil tins, and boxes of supplies into the sea. As a result of the storm, town lots back from the beach brought from $1500 up as the stampeders began to build out of reach of the waves.

Back of the beach were discovered, at the foot of sloping hills, two ancient sea beaches, rich with yellow dust. Behind the beach was the tundra—innocent-looking hummocks of green with channels of oozy muck between. When a stampeder stepped on a hummock, it rolled over, and down he went into the muck a foot or more until arrested by the frozen muck beneath. Over this uncertain ground was built from Nome to Anvil Creek in the summer of 1901 the seven-mile Wild Goose railway, so called because after spring thaws the prospectors never knew where to find it. It was laid on planks, and the rails quickly sank out of sight, making it difficult to keep the cars upright. Even so, the railroad was the pride of the community, and with a flat rate of forty dollars a ton it paid for itself during the first year of operation.

The gravel in every stream entering Bering Sea, from Unalakleet to Grantley Harbor, a coastal distance of more than 300 miles, carries placer gold. Presence of gold was reported in 1867 by members of the Western Union Telegraph Expedition. The first authentic discovery of gold was made on the northern shore of Bering Sea near Sinrock in July, 1898, but the first gold found in commercial quantities was on Anvil Creek and Snow Gulch in the fall of 1898.

When an epidemic of claim jumping began in 1900, the miners resorted to the Miners' Meeting, by which all claims were recorded and their ownership enforced. They passed rude laws and exacted rude penalties for crimes: for murder, hanging; for threatening with a weapon or theft, banishment; for personal quarrels, a public fight and let the best man win. Prices soared, and grocers and barbers reaped bigger fortunes than most miners.

Civil law came in the person of Arthur H. Noyes of Minnesota and Dakota. Noyes had arrived on the same boat as Alexander McKenzie, of the Alaskan Gold Mining Company in New York. Four days after he arrived Noyes appointed McKenzie receiver for five of the richest claims in the district. Under the terms of the receivership McKenzie could work the mines and hold the gold under the order of Judge Noyes, from whose decision no appeal could be made. Noyes ordered the ejection of miners along the beach from all but a thin strip of land along the water's edge, so that the rest of the rich property fell into the public domain. Matters grew so bad that miners did not dare to work their ground, for fear Noyes and McKenzie would hear of rich strikes and seize the claims. Eventually both McKenzie and Noyes were brought to trial. McKenzie, sentenced to a term of a year and a day, was pardoned shortly after his conviction by President McKinley. Noyes was fined $1,000 and several of his henchmen jailed. Judge James Wickersham succeeded Noyes in 1902, and in a few months brought order into the Federal court. James Wickersham was born in Patoka, Illinois, in 1857 and admitted to the bar in 1880. He was United States District Judge for the Third Division of the District of Alaska from 1900 to 1907 and Alaska Delegate to Congress from 1909 to 1921, and again from 1931 to 1933. Although in 1939 he was retired, living at his home in Juneau, he was still adding to his exhaustive library on Alaska and bringing up to date his *Bibliography of Alaskan Literature.*

The first devices used by the early stampeders were primitive implements such as the gold pan, the rocker or cradle, and the long tom. With these a miner could wash the gold from one, or at the most two cubic yards of gravel a day. Results of these methods on the beach stimulated gold-seekers to prospect the streams and foothills immediately north of Nome, and soon gold was being extracted in large quantities from Anvil Creek, Snow Gulch, Dexter, Dry, Bourbon, Mountain and Otter creeks, and many others. The depth to bedrock on these streams varied from three to fifteen feet, and in order to work this ground profitably an increased yardage per day had to be washed by each man. This problem was met by the sluice box. Lumber was whipsawed from logs that drifted upon the beach to make the boxes, into strings of which the gravel was shoveled. The gold was caught by riffles, or crossbars, in the boxes. By this method a man could wash from eight to twelve cubic yards a day, and many of the mining claims so worked yielded their owners more than a million dollars' worth of gold in a few years. Twelve of the upper claims on Anvil Creek alone produced more than $21,000,000 worth of gold.

As the creeks were staked, other miners began to prospect the tundra. They sank shafts, ran drifts, and found pay gravel in the tundra, the hills, and the benches of the streams. Most of this higher ground is perpetually frozen, and the depth to the bedrock varies from twelve to fourteen feet. To work this kind of ground profitably, machinery had to be installed to thaw the ground and to hoist the pay dirt to the surface, where it was washed by water that had to be brought in ditches from one to fifty miles away. To work ground in this fashion it had to yield from $3.75 to $5 a cubic yard. Since the richest pay dirt always lies on or near bedrock, only the ground on bedrock or a few feet above was extracted. At other levels the pay streak remained undisturbed.

To recover the gold in the lower-grade ground, the hydraulic system of mining was used. By this method, the ground is all washed or lifted by the force of water into flumes where the gold is recovered. Where there are extensive gold deposits with ample water and a favorable grade, low-grade ground can be worked profitably.

But vast areas of gold-bearing gravel in Seward Peninsula are situated upon streams with little grade, on thawed wet flats, and on the tundra, and cannot be profitably worked by any of these methods. Such areas had to be mined by the cheapest and largest-scale method yet devised—the use of dredges upon ground that has been thawed with water. In and around the Nome district much pioneer work in dredging was done, and with the application of modern methods a dredging machine that in 1923 was capable of digging only a few hundred cubic yards of frozen ground a day will now handle upwards of 9,000 cubic yards a day. Scientific principles applied to placer mining have in less than a generation made it less a speculation and more nearly a stable investment.

Since 1900 more than $103,000,000 in placer gold has been extracted on Seward Peninsula. More than 85 percent of this amount was produced in the vicinity of Nome—not because the ground around Nome is richer, but because transportation in the area is easier. With the increasing use of the airplane for the transportation of freight, and the building of roads, operation will widen to other areas remote from Nome.

In the mining districts of Seward Peninsula are numerous lodes bearing gold quartz, silver, cinnabar, antimony, iron, graphite, tin, coal, lead, platinum, copper, asbestos, and other valuable minerals. Most of these await sufficient capital to develop them. In addition, there exist, although perhaps not in some cases in paying quantities, arsenic, bismuth, chromium, manganese, mercury, molybdenum, nickel, and zinc.

Much less impressive in value of product than mining, but of great importance, is the fur-trapping and fur-farming industry. Many varieties of fur-bearing animals are trapped, and white, blue, and silver fox and mink are raised successfully on Seward Peninsula. Fishery resources, especially herring, salmon, and crab, are large, but no development has been made except at Golovnin and Teller, where herring is commercially packed. Vegetable and flower gardens flourish, but large-scale agriculture is impossible.

Big game hunters may find mountain sheep and an occasional Alaska brown bear on Seward Peninsula. But most hunters come here to meet two varieties of game not to be encountered in the Interior and southeastern Alaska—the walrus and the polar bear. Competent guides may be hired at Nome, and only from two to three days' travel during July, the best time to hunt the walrus, is required to locate and approach large herds on the ice floes. The best season to hunt polar bear is during April and May, when their fur is prime, and the haunts of this great bear can be reached, by plane, in from five to seven hours. Near-by streams are full of trout, grayling, salmon, pike, and whitefish.

In 1920 occurred an event that marked the opening of an era quite as important to northwestern Alaska as the application of modern large-scale methods to gold placer mining. On the afternoon of August 17, 1920, the Black Wolf squadron of the United States army, composed of four DeHaviland planes under the command of Capt. St. Clair Street, landed on a sand spit at the mouth of Nome River, having flown from Mineola, New York. Other long-distance flights followed in rapid succession. Wiley Post and Harold Gatty arrived near Nome from Khabarovsk, 2,400 miles distant, on June 29, 1931, 6 days and 17 hours after leaving New York, a round-the-world flight that ended successfully in New York, on July 1. An unsuccessful attempt was made in 1931 by Robbins and Jones to fly from Seattle to Tokyo. Post made a successful solo world flight in 1933, landing at Flat, but crashed and was killed with Will Rogers, in Alaska July, 1935. While Post was flying over Nome in 1933, Jimmy Mattern was being fêted there after his crash near the Bay of Anadyr, Siberia, during an attempted world flight. After being given up for lost, he was rescued by Soviet fliers who, by a dangerous hop, brought him to Alaska. The rescue plane was commanded by Pilot Levanofsky, who in the summer of 1937 was lost somewhere near the Pole on an attempted Moscow-United States flight, and unsuccessfully sought by many Alaska fliers, including Jimmy Mattern. Hans Mirow, a commercial flier, in 1936 flew in 15½ hours from Seattle to Nome.

A disastrous fire in 1934 consumed most of the business section of

Nome, but advantage was taken of the situation to construct modern, permanent business buildings, to widen streets, and straighten sidewalks. Today, the central trading post of a new country still awaiting large-scale populating, Nome is no longer a town of stampeders, of roaring dance halls, of the Malemute Saloon, of gals named Lou—the last of which, a tall lady known by the expressive name of Miss Short-and-Dirty, departed long ago. The metropolis of northwestern Alaska, serving an area peopled by about 2,000 whites, although shorn of its gaudy past, is still noted for the hospitality and good fellowship of its inhabitants, whose application of modern methods to mining enables them to take about $3,000,000 in gold a year, out of the frozen soil.

Alaska Eskimos, numbering about 15,000 in 1930, are distributed through the 182,000 square miles of the Second Judicial Division along the coasts of Bering Sea and the Arctic Ocean, and have penetrated inland by way of the Kuskokwim, Yukon, Koyukuk and other rivers. For the most part they live in a region with long, severe, winters and short cool summers, a country of endless moss and lichen-covered tundra, of barren, rocky plains, with a few heatherlike moors and willow thickets. Today, Eskimos living near white settlements frequently live like their white neighbors, though on a lower economic scale. But in remote districts in Alaska their ancient social system prevails.

The Eskimos, in their original culture, had no tribes, but lived in communities based on the "free accord of free people" of which Kropotkin dreamed. Usually there was some outstanding person in each community who was "the first among equals." A single unwritten law guided the actions of each individual—that everybody who was physically able should contribute to the struggle for food and clothing. An individual who did not do so was not permitted to starve, but was despised by all, and felt himself beyond the pale of the community—the most terrible punishment to any Eskimo. Everybody might hunt where he pleased, and the proceeds of the chase belonged not to the hunter, but to the community. The hunter took for himself small seals and caribou, but was obliged to give to each family of the community a piece of meat or invite him to a meal. Larger animals were divided by the hunter, and huge supplies of meat, such as whales, were common property, and each took what he needed. Personal objects such as clothing, sleds, weapons, were personal property, and an Eskimo father before selling one of his children's toys to a trader, still politely asks the child's permission. Objects used for the benefit of several families, such as communal houses and hunting and fishing lodges, belonged to the community. A man who was not using his fox trap or fish spear had to allow another man to use it. Among the Alaska Eskimos, however, after a few generations of contact with white men, there was no limit to the amassing of property by the individual, and the un-Eskimo accumulation of unproductive capital by individuals is now common.

Marriage took place as soon as a man could hunt sufficient food. Persons with the same name, and close blood relations might not marry, and in Alaska persons with the same amulet—a fetish, unlike the totem of Alaska Indians—were also prohibited from marrying. Marriage was based on the social needs of the community—thus a good hunter often required two wives to dress the skins he took. Since a woman was an essential partner of any expedition, to sew and cook and perform other household tasks, a hunter about to depart on a long expedition would, if his own wife was unable or unwilling to accompany him, exchange wives with a neighbor—of course, with the consent of everybody concerned. The exchange of wives was considered an effective means of cementing a friendship. Upon the threat of catastrophe to the entire community, a general exchange of wives was sometimes made, to confuse evil powers by changing identities.

When children arrived, the parents usually settled down. Children are still greatly loved by Eskimos, and a childless Eskimo may offer to buy an adoptive son for a frying pan or a handful of nails. The children belonged equally to the father and the mother, and no question of descent arose, as there were no clans or hereditary class distinctions. Children almost always got their own way, and were never punished, yet in spite of this or perhaps because of it were apt to be more obedient than children of European parents.

Theft and robbery were practically unknown. Justice was based not on the principle of punishment, but on the feeling that the community must be maintained at all costs. Thus a community would sometimes combine in killing a suspected witch who upset the normal smoothness of community life, old or sick people who needed care that would endanger the lives of the rest, or a man of brutal character who refused to abide by communal customs.

Since birth was a mysterious thing, close to death, it took place in a separate hut or tent where the mother remained, eating a limited number of foods and refraining from naming certain animals of the chase. When the child was born, it cried because it wanted a name. Some time before, perhaps, a strong individual had died. Nobody since his death had mentioned his name, and if the name was a common word it had been temporarily dropped from the language. That person's name had been wandering around helplesly since the death of its owner; now, on the birth of the child, it found a resting place in the new person.

After having learned at home by games the rudiments of their adult work, the children would begin to help in the house and on the hunt. The boy made his first kill, everybody was happy and proud, and there was a great feast. The girl came to puberty, and for twelve days could not leave her sleeping room, eat fresh meat, blubber or berries, or scratch her head. Then, accompanied by an old woman, she went down to the sea or to a creek, bathed five times, and ran around a fire after each bath. So she came of age.

When a boy had established himself as a good hunter, he looked around for a bride, made a present to her parents, and settled down without ceremony in a sod hut or tent. Life now became a difficult struggle. The day was full of hard and often dangerous exertion. During long winter nights and on days when the community was stormbound, the couple attended drum dances, where the only musical instrument was a tambour beaten with a stick. Fables like those of Aesop were told. Supernatural stories, part of the great unwritten literature of the Eskimo, were recounted by the best tellers of tales: that of the old woman who governs all sea animals at the bottom of the sea and is easily angered; that of the man who is the moon, and of his sister the sun. Perhaps the young hunter sang a song—his own song, the one nobody else was allowed to sing. Or he had had a quarrel with another hunter, and improvised, in the richly allusive Eskimo tongue, satirical verses about his enemy, more cutting, in the closely communal atmosphere of the Eskimo, than the lash of a whip across the face. Or he told a simple, factual story, with himself figuring as the chief character. A certain hunter—who might be himself—outdistances others in the chase, or kills the biggest seal, all with the help of no more witchcraft than occurs in the life of every great man. He had an abundance of words to describe every natural phenomenon; for instance, there were separate words for "snow in the air," "drifting snow," "snow on the ground," "soft, watery snow." Sometimes he might link an almost endless chain of ideas together in a single centipede-like word. He would start in the middle of the incident, return to explain an allusion, and wander backward and forward in his story until he had told it all. A direct question would confuse him and make him fall silent. Perhaps he had had a quarrel with his wife because she spent the night with a man no friend of his, and reproached her openly. His wife and the women around her take exception to his discussing the matter. It has already occurred. Had he warned her openly *before* the event, he might have prevented it. To talk about it openly now, when it had already taken place, was to disturb the peace of the community.

Ivan Petroff describes the arrival of strangers—"Nobody meets them, but the new arrivals, seeming perfectly at home, tie their dogs to the posts of the storehouse, discharge their lot of provisions or utensils, and place their sleds on top of the roof. The woman and the boy then enter the house while the man proceeds to the kashga (house), which he enters without any solicitation—in fact, words of salute are missing in the language of this people. Making his way to one of the platforms he shakes the snow from his boots, then takes them off and hangs up his outer garments to dry; he then divests himself of his gloves or mittens and draws his arms out of the sleeves of the inner parka. Seating himself he may remark to the man next to him, 'I sit beside thee,' to which the other will answer, 'Tavai, tavai,' an expression of assent, with no very definite meaning. The newcomer then lights his pipe or takes a pinch of snuff, and after thus refreshing himself he begins to talk. He does not address himself to anybody in particular, but communicates what has happened along the line of his journey, what he has seen and what he has heard in the various villages through which he has passed; but everything is related in a disguised, indefinite manner. For instance, he says 'Russians or traders have been in such a village and made presents of tobacco.' This means that he has seen the strangers and himself received presents, without specifying where the meeting took place and what other villages were visited by the Russians. Or he will say that such a man lies in the kashga dressed in a new parka, with his head against a wall, which means that somebody has died. Again he says in such a house the shaman or tungak is busy, a sign of sickness; of another family he says that oil and blubber are plenty with them, without going to the trouble to explain that the head of the house has returned from a long hunting or trading journey crowned with success; who died or who was fortunate in hunting, is only ascertained upon further questioning, which may be postponed for days. At the time of the first narrative just described nobody makes any remarks except, perhaps, 'Ah kika,' an exclamation which is affirmative.

"The stranger has not come to see anybody in particular, but wishes to dispose of some goods in exchange for other articles he needs. After having told his tale, he brings into the kashga all he wishes to barter, declaring at the same time that for such an article he wishes to exchange such other commodity. Everyone present inspects the articles deposited on the floor, and if one finds anything of use to him he leaves the kashga without saying a word and brings the article asked in exchange, which is at once submitted to the inspection of all present. If the stranger is not satisfied he remains silent, the purchaser withdraws, and others try their fortune until a trade is made. Here comes a man who purchased something of the stranger a year or two previously, but, ruing his bargain, returns the article, saying simply 'This does not suit me.' The other picks it up and returns without any remonstrance anything he has in his possession of equal value with the original price."

Sometimes an Eskimo, overwhelmed by the vastness of the land in which he lives, weighed down with the immensity of the struggle for existence, his nerves on edge with long vigils during the bright summer night at the hunting lodge, is turned, by a trifling incident, quite crazy for a few moments. He will break everything within reach, shouting meaningless sentences. The fit lasts only a short time, and he is soon quite calm, rather the better for his attack of "arctic hysteria."

Today, in spite of the difficulties and dangers of fighting his environment in the daily struggle for food and clothing, the Eskimo in a remote community lives out his life in an atmosphere of acceptance and communal peacefulness, in great contrast to the reticent, taciturn Indian of the Interior. If his friends laugh, he laughs. If they cry, he cries. If they make an assertion, no matter how improbable, he believes them—they said it, and with a reason, therefore it must be so. It would never occur to him to assert himself overmuch, and if he becomes a leader it is because he places himself in the current of public opinion, not against it. The only thing that seriously disturbs him is the prospect of standing alone against the community, whether for failure to perform his share of the work or because he possesses traits that earn for him the stinging condemnation of his fellows. He is instinctively materialistic in his view of the universe, adopting only those superstitions which to him are necessary explanations of odd or unusual facts. He has a genius for cartography, and can make a map from memory better than most white men. He is proficient in the arts of carving and drawing and has great manual skill in manufacturing equipment.

At one time he lived almost exclusively on meat, and frequent draughts of ice-cold water. The seal, the walrus, and the whale provided him with food, blubber for his lamps, skin for his clothing, boat covering, and thongs. Wood for the rafters of his simple sod house and for sleds drifted to the coast of his village from the Yukon and McKenzie rivers. He got about on land on a simple dogsled of runners connected by cross slats lashed on with seal thongs, and on sea in a seal-skin *kayak* or *baidarka* into which he fitted himself with a watertight walrus-intestine coat and hood. The man's ordinary clothing consisted of boots and stockings, trousers, a frock with a hood, and mittens. Women's frocks had a long tongue in front and behind, something like an American man's shirt; but the male frock was short. Children were carried under the back of the mother's or sister's frock. In the spring snow goggles made of wood with narrow slits for vision were indispensable to prevent snow blindness. Since water had to be obtained by melting ice and snow, and the blubber could be had only by long and strenuous hunting, bathing was infrequent. Alaska Eskimos made use of the Indian and Siberian sweat bath. Men trimmed their hair all around, bowl-fashion, or let it hang loose; and women braided their hair and wore it in two coiled plaits over the ears, or hanging. Tattooing was confined largely to the women. The labrets, (pegs of bone or ivory thrust into holes drilled in the corners of the mouth and lower lip or the cartilage of the nose) were sometimes worn. Sexual modesty was unknown, but the sexual organs were usually concealed because they were the seat of the mysterious phenomenon of procreation.

The winter houses consisted of a framework of whale jaws and driftwood covered with sod and moss. The entrance was a narrow passageway sloping downward. At the back of the room was a low platform, and in front of it, at the sides, were small platforms for lamps. Above the entrance was a window of gut skin, and a hole in a roof supplied the ventilation. When covered with snow this dwelling looked like the "snowhouse" of the Central Eskimos. In Alaska the snowhouse was an emergency affair occasionally built when on the trail for temporary shelter. In summer they moved into tents. Alaska Eskimos today make rather poor pottery, instead of using soapstone for dishes. Plates and bowls are of wood, and pails of baleen or wood. Sucking tubes are used to drink when ice forms on the top of the pail or when the lips begin to split with changing temperatures. Most of the Alaska Eskimos south of Bering Strait heat their houses with fires, and use lamps for illumination only. For the isolated Eskimos on great reaches of the Arctic Coast, however, the lamp and the weapons of the chase are the cornerstones on which has been built the greater part of Eskimo culture.

When an Eskimo was sick, the shaman was sent for, and with spells made him well. Eventually he had to die, lose his name, and go to the underworld, below the visible world, where it was always warm and comfortable. His body would then be wrapped in a skin and buried on a platform. In order that he might not be helpless in his new life, his friends would place beside him weapons and implements that belonged to him when he was alive. A great feast was held, where many valuable furs and utensils were given away, proudly, in the name of the dead man. For a moment after death he might feel cold and ill, but soon he would be as good as ever.

With the forming of the royal monopoly called the Russian America Company in 1799, the Pacific Eskimos were required to pay a tax in furs. The Bering Sea and Arctic Ocean Eskimos were rarely visited by Russian fur-hunters, and were not interfered with, as part of the fur trade depended upon their retaining their freedom and independence of movement. Little was known of the people who lived above the latitude of the Yukon until the "Boston men" began to hunt the whale in Arctic waters from about 1850. In a few years the whole economy of the Eskimos was altered. They learned the use of firearms and the harpoon gun, and many of them shipped on board whalers as members of the crew. In coastal villages cheap whisky was introduced, and Eskimos roistered with whaling crews in fantastic orgies, during which they were cheated out of their possessions. From civilization the Eskimos acquired prostitution, or the idea of renting one's wife or daughter; slavery, or the idea of selling her outright; drunkenness; and murder. In 1866, according to one authority, the Western

Union Telegraph Expedition brought another gift of civilization—syphilis—and with the killing off of the caribou and the introduction of patent foods, white flour, and sugar, the virtual ruin of Eskimo health and the ancient culture just described was complete. Only the vigor of their stock and their strong sense of self-preservation saved the few remnants of the traditional Eskimo way of living that survive today.

After 1890, when substitutes for whale oil and whalebone became general, the whaling fleets disappeared from the Eskimo country. Eskimos, after painfully acquiring civilization, found no use for it. Two years later they began to make a painful adjustment, with the help of the Alaska Bureau of Education under Dr. Sheldon Jackson, to a brand-new economy, based on reindeer. Reindeer were imported from Siberia with Norwegian Laps as instructors, and reindeer slowly became an important economic factor in the life of the Eskimo. Today the animal furnishes many Eskimos with food, skin for clothing, and feed for dogs and foxes.

Dr. Jackson's vigorous and useful work among the Eskimos assisted them greatly. Missionary teachings, however, influenced Eskimo life less profoundly. Though they pray "Give us this day our daily meat," and "Thine is the dynamite forever," they are much more interested in the cooperative stores—encouraged among them by the Bureau of Indian Affairs—and in the dental and medical care furnished their children by the Bureau's flying doctors and dentists and other medical services. The Reindeer Act of 1937 will, when the funds for its execution are allotted, prevent the reindeer herds from slipping from their grasp. The revival of Eskimo handicrafts, the designation of trapping areas closed to all but Natives, and greater opportunities of employment of Eskimos in seasonal industries, may restore the Eskimo to his lost estate. "There is every reason for extending the most unreserved praise to the American Government," writes K. Birket-Smith, the author of the most recent and comprehensive account of the Eskimos, "for a result which few had ventured to hope for a little more than a generation ago."

From Nome a tramway, built in boom days, extends north to SHELTON. The tramway is kept in repair, but residents furnish their own means of transportation, whether flange-wheeled automobiles, handcars, or "pupmobiles" (a small push car to which are harnessed a dozen dogs). From Shelton a road north leads to TAYLOR (4pop. in winter), a mining camp with a store and a roadhouse, the headquarters of the Kongarok placer mining.

NOME TO KOTZEBUE SOUND

Local coastwise vessels ply out of Nome to points up and down the coast from St. Michael to Kotzebue during the summer. Three airplane companies carry passengers and freight to and from Nome the year round. Dog teams are in use during the winter.

Southwest of Nome in the Bering Sea lies ST. LAWRENCE ISLAND, about 88 miles long and averaging 20 miles in width, 40 miles from Siberia and about 118 miles from Cape Rodney, near Nome. In the words of Muir it is "a dreary, cheerless-looking mass of black lava, dotted with volcanoes, covered with snow without a single tree, and rigidly bound in ocean ice for more than half the year." Sighted and named by Bering in 1728, the Native name of the island is preserved in its northwestern cape, Chibukak. It is of volcanic origin, and near its center is a mountain range, whose highest peak yet to be measured is MT. ATOK (2,070alt.). Along the southern part of the island lies a region a third its length, consisting of valleys and gentle slopes with rivers, creeks, lakes, lagoons and many small tundra ponds. The weather is foggy and disagreeable; for eight months the island is surrounded by the Arctic ice pack, and there are frequent severe storms. There are many foxes, particularly white and blue, some 10,000 reindeer, descendants of the herd of seventy placed on the island in 1900, polar bears that come and go with the ice pack, whales, seals, and shore and land birds. There are no trees or shrubs of any height on the island, and driftwood is used for lumber. The entire island is covered with moss, lichens, grasses, creeping willows and birches, and other vegetation of the tundra. Some minerals occur; whether in paying quantities is not yet known.

The island (553pop. est. 1935) is inhabited almost entirely by St. Lawrence Eskimos, similar to the near-by Siberian Eskimos, with whom many St. Lawrence Eskimos are related by blood, and with whom they trade and exchange visits. There are two principal villages, SEVUOKUK or GAMBELL (250pop.) on the northwest cape, and SEVOONGA (Seevonga, Savonga) (p.o., 139pop.) on the north cape, the latter the more modern village. A few families live at other places.

During summer and fall temporary camps are set up for gathering food plants and hunting seal or walrus and trapping fox. At each of the two villages a mayor and village council are elected by popular vote to administer the affairs of the group. Each village has a local cooperative store, managed by a board of Eskimo directors under the supervision of the Bureau of Indian Affairs. The board elects the storekeepers and the chief reindeer herder, sets prices, advances food and supplies to families that have had a bad season or wish to build houses, and sells fox pelts and articles of handicraft.

Although for long periods missionaries from the Presbyterian church have worked among these Eskimos, Christianity is not the main force in their lives. Traditional beliefs and social practices govern the inhabitants to a great extent, and fetishes have an honored place in many homes, as have "Flomgomee" Ward mail-order catalogues, the principal picture book of the older illiterate inhabitants. Old-style houses are modeled on the Siberian winter house, consisting of walrus hides lashed on a somewhat circular framework of wood, its dome-shaped roof held down by many lashings of walrus hide to the ends of which heavy rocks and bones are attached. For heat, light, and cooking, seal oil is burned in lamps of baked clay. At night, reindeer skins are unrolled on the floor for beds, a driftwood log serving as pillow. The floor is of walrus skins over layers of Native grass. Modern houses are built of driftwood or imported lumber with a wooden floor. Since the Eskimos believe that sea game is frightened if it sees a light, and since Sevoonga faces the sea, few houses at this village have windows in the front. The size of the house depends on the wealth of the builder, and there are several large two-story houses in which several divisions of a family live.

The island was probably settled by Siberian Eskimos. Previous to 1879 it was known to have several large and populous villages, but during the winter of 1879-80 a disastrous famine accompanied by disease caused the death of two-thirds of the island's population.

Visits of whalers wrought havoc among the islanders. One of the few narratives of such visits has been preserved. In 1880 a whaling vessel appeared off what was then a prosperous village on Southeast Cape. The master sent members of his crew ashore with bottles of grain alcohol, cut with water, and flavored with syrup. There was an immediate demand for the firewater among the Eskimos, and they traded ivory, whalebone, and furs for the bottles. The officers and crew selected a harem from the young women of the village, and paid them in alcohol. When the whaling vessel left, the entire village of 450 Eskimos was dead-drunk and beggared, for they had even cut up their skin boats to trade for liquor. Around them were plenty of hair seal and walrus, but by the time the village had sobered and collected weapons the game was gone. Only about twenty-five villagers survived.

St. Lawrence islanders still hunt the bowhead whale. The methods used have undergone practically no change in the past fifty years. The only changes have been in equipment. The ivory harpoon has been supplanted by a darting gun which is, in effect, merely a harpoon with an explosive bomb attached. The skin canoe, or *umiak,* has in some instances given way to substantial wooden whale boats such as were used by the New Bedford whalers. Outboard motors are used to pursue the whale after it has been struck, and to tow it ashore when ice and wind permit. Many ceremonies accompany whaling. During the summer months, certain species of grass are gathered, put in a container, and allowed to ferment. These, together with a box of tobacco, a piece of deer fat, some codfish, and a poke of whaleskin (provided a whale had been caught the preceding spring) are stored for use in the moon worship that takes place in February, March, and April.

The worships commence in February when the new moon is first visible. The ceremony begins in the afternoon when the head of the house, who is also the captain of the boat, brings in the fermented grass, meat, fish, and tobacco. These are spread on the floor. The grass is ground to a pulp, which is mixed with oil. On this the wife of the captain puts five small pieces of meat, one in each corner and one in the center. Pieces of deer fat are then placed on top. A plug of tobacco is cut into small pieces and put into a tobacco pouch, while another plug is placed with the fermented grass. When the preparations have been completed, the viands are placed in the center of the floor and covered with skins. The whaling gear is next brought in and put in order as if in readiness for hunting, and it is left in that position during the night while the boat captain sings whaling songs.

In the morning before sunrise, the captain calls together his crew, who take the whaling gear to the water's edge. The boat is then launched and each man takes his place in it. After the captain has rocked the boat several times, it is hauled upon shore.

At sunrise, the dishes of food which have been prepared the night before are placed in front of the boat near the edge of the water. As an offering to the whales, the captain throws small pieces of meat into the water, after which the remainder is eaten by the participants, somewhat in the manner of a communion.

During the whaling season a constant watch is kept for whales. When one is seen spouting, there arises a feverish activity in the village. Men, women, and children rush to the beach carrying the equipment. Every available boat is launched as quickly as possible, sails are hoisted, and the chase is begun.

No sound is made in the boats in spite of tense excitement. As the whale is neared, the striker takes his place and waits for the captain to get the boat in position. The proper position is to the left and rear of the whale, out of his range of vision. When the boat is close enough, the striker thrusts his harpoon as deeply as possible. The captain then gets the boat clear of the tail, lowers the sail, and hoists an inflated sealskin poke to the top of the mast as a signal to the other boats. They then lower their sails, replace them with outboard motors, and take up the chase.

As soon as the whale is dead, the tail is hauled up on the edge of the ice and cut into sections, to be used later in the ceremony. The center portion of the tail is lashed to the bow of the successful boat and the other pieces, together with the flukes, are put into a boat. These are considered the choice portions of the whale and belong to the captain of the boat whose crew killed it.

The remaining boats maneuver the whale into position alongside the shore ice, where it is fastened with a walrus skin rope. Another skin rope is fastened to the top of the whale, passed around the outside underneath the whale, thence onto the shore, then through a crude block and tackle made by cutting grooves in ice hummocks.

By this time the boats have gathered around and the men are sharpening their knives, that range from ordinary six-inch hunting knives to formidable-looking weapons made from old hand-saw blades attached to poles six or eight feet long. There are no rules governing the division of meat; each man is entitled to as much as he can cut. The outside skin, called *muktuk,* together with a layer of blubber two or three inches thick, is first removed. The muktuk is a choice delicacy. It is about an inch and a half thick and has the consistency and appearance of an automobile tire on a rainy night.

Finally the boat is pulled ashore, after which the captain and the crew bring to the captain's house the sections of the tail and flukes which were removed at first, together with the eyes, ears, and nostrils. They are pieced together in their original form in front of the house. After a brief ceremony, they are taken to the meat cellar, accompanied by a procession of the family.

The last gun of the Civil War was fired in Bering Sea near St. Lawrence Island on June 22, 1865, by the Confederate war-vessel *Shenandoah,* seventy-four days after Appomattox, and nearly two months after the surrender of the Confederate army. Setting out from England, the *Shenandoah* rounded the Horn and cruised for thirteen months, covering 58,000 miles. Without taking a life or losing one, she captured thirty-eight Yankee vessels, mostly whalers, 25 of them after the war had ended. Returning from Alaska, off the coast of Mexico, on August 2, she heard the news of the surrender of the Confederate government. She rounded the Horn once more and surrendered at Liverpool to the British government on November 6, one hundred and twenty-two days from the Aleutian Islands, without having sighted land once on the way.

This island is a treasure house for archeologists, and since Dr. E. W. Nelson visited it in 1881 and wrote a monograph on the Bering Sea Eskimos there have been many archeological expeditions to the island organized under the auspices of the United States National Museum, the Smithsonian Institution, and the University of Alaska. Archeological remains have also been found on the rocky little PUNUK ISLANDS, some 12 miles south of the east cape of the island.

West of Nome lies KING ISLAND, a melancholy granite rock less than a mile long, on the 168th meridian near Bering Strait. It is inhabited by 137 King Island Eskimos, the best sailors on the Bering Sea and skillful ivory carvers. Its climate is divided into two seasons—four months of fog and eight months of ice. John Muir visited King Island in July 1881 and described the village. "Some fifty stone huts, scarcely visible at a short distance, like those of the Arizona cliff-dwellers, rise like heaps of stones among heaps of stones. There is no way of landing save amid a mass of great wave-beaten boulders. In stormy times the King Islanders' excellent canoes have to be pitched off into the sea when a wave is about to recede." Each summer the

King Islanders leave their island and come to Nome, where they live in rude huts or under their tipped-up *umiaks,* selling their carvings to tourists. Each fall they return home. From the two kinds of ivory—white, pearly ivory of fresh walrus tusks and "fossil ivory" (either old ivory stained by oxidation and the salts of various minerals to fine shades of green and brown, or fossilized mammoth tusks)—they carve salt shakers, ash trays, egg cups, back scratchers, cribbage boards, buttons, gavels, paper weights, cigar and cigarette holders, knives, forks, carving-set handles, boxes, beads, rings, umbrella handles, etc. Since these objects are not articles for their own use, they may combine them in unusual ways, offering for example a combination ash tray and salt shaker, or eggcup and back scratcher. The influence of the missionary is frequently seen in crude emasculation of human figures. These human figures are sometimes dolls, sometimes images used in traditional ceremonials. Objects that were expressions of the Eskimo's native culture, such as carved tools and weapons, are illustrated with events of daily life in low relief or line etchings. Taken at their best they are comparable to the most delicate workmanship of the best primitive peoples. At their worst, these carvings are on the level of commercial art the world over.

Near Nome is SLEDGE ISLAND, on which are two deserted Eskimo villages. The island was named in 1778 by Cook, who "found a little way from the shore . . . a sledge which occasioned this name being given to the island." The Native name, Ayak, also means "sledge." About 80 miles northwest of Nome on Port Clarence Bay is TELLER (p.o., 76pop., mostly Natives), a port on Bering Sea at which an airport is maintained. In a rich gold-placer area, where there are also deposits of tin, graphite, and copper, Teller contains a Territorial school, a Lutheran mission, fox farms, and a reindeer cold-storage plant and corrals. Resident here is a reindeer unit manager. The town is near the site of an old Eskimo village known as Nuk, once a large and important Eskimo town, but now deserted. Here a big battle occurred in the first part of last century, in which the Eskimos decisively defeated a large force of invading Siberian Chukchis. About 7 miles from Teller is Teller Mission at which is a Federal school for Natives.

In 1892 Teller was founded as a reindeer station and named after Henry Moore Teller, then secretary of the interior. Here were brought

171 head of reindeer on July 4, 1892. From 1892 to 1902, 1,280 animals were imported from Siberia, after the whaling crews, fur traders, and gold rush stampeders had made serious inroads on fur-bearing animals and herds of caribou. From the small original herds there are something like one million reindeer in Alaska today. Under the Bureau of Biological Survey field men have done much experimental work on the habits of the reindeer.

Writing in 1903, Dr. Sheldon Jackson stated, "While the original purpose in the introduction of domestic reindeer into Alaska was to assist the Natives and to help them to a better and more certain method of gaining a livelihood, yet the reindeer will prove equally important to the whites who may seek homes or engage in business in subarctic Alaska." So they did: after 1914 business concerns invested over $2,000,000 in abattoirs, corrals, lighterage plants, and steamship transportation. Reindeer meat was shipped Outside, canned dog food and "jerkie" manufactured of less choice cuts, and the hides tanned into leather suitable for clothing. The industry was never fully developed, and after Congressional hearings and a long series of reports which attempted to show that the story of whalers, fur traders, and gold stampeders might be repeated by reindeer companies, the President signed in 1937 a bill to restore the reindeer to the Eskimos.

Reindeer flock like sheep and graze like cattle. In intelligence and activity they rather resemble the horse. Except during September and October, the mating season, they are extremely docile. Each herd pastures over hundreds of square miles; in summer eating tender grasses, willow buds, sedge, mushrooms, and berries, and in winter subsisting entirely on lichens. The warm weather and the fierce Arctic mosquitoes in early summer force the herds out of the inland highlands to the seacoast, where they are less molested by mosquitoes and can cool themselves in the ocean. Reindeer herdsmen take advantage of this annual migration, counting and marking the herds by notches in their ears in the early summer.

The Alaska reindeer is dark brown in color, although herds often contain white and spotted individuals. The does bear one fawn each year, rarely two. Early and strong fawns sometimes breed the first year. The meat is juicy and of a delicate flavor.

From the reindeer skin the Eskimos make parkas, mittens, and *mukluks*. These are sewed with the sinew of the reindeer, which will not rot like cotton thread, with a walrus-ivory or trader's steel needle, in a delicate over-and-over stitch. The skin is scraped and cut to shape with a crescent-shaped knife. The simple overall garment is trimmed with pieces of wolf and reindeer hide. From the reindeer skin are also made the fur boots or *mukluks*. In the most usual type, the sole is carefully crimped with the teeth into the high-topped upper, before being sewed, and the top decorated with geometrical designs in colored wool or grass. An inner sole of dried grass protects the feet from the hard gravel of ice, and absorbs moisture. Sometimes a sock of thin fawnskin is worn.

Teller was the "location" for a Hollywood movie of Eskimo life, in the course of which Hollywood directors taught Eskimos how to build picture-book snowhouses and to kiss American-fashion. Neither of these imported customs made a permanent impression on Eskimo tradition, and the Natives who took part in the picture, after traveling to Nome to see it, reported that they enjoyed "King Kong" much more.

East of Teller, near the mouth of the Kutzitrin River, is IGLOO (p.o., 113pop.), a fox-raising center. PILGRIM SPRINGS is a post office near Igloo.

WALES (p.o., 170pop.), on the cape of the same name, is near the westernmost tip of Seward Peninsula. It has a store, a Presbyterian mission, a Native school, and reindeer corrals. Near here was the Eskimo village of Kingegan, an important center known to Natives as far south as Norton Sound, with a population of 488 in 1890. A few miles east of Wales is TIN, the greatest tin-producing district on the North American continent. Two hundred fifty tons of tin ore were mined here in 1937.

West of Wales, on the international boundary, are the DIOMEDE ISLANDS, of which Big Diomede belongs to the USSR, Little Diomede to Alaska. These islands, forbidding rocks jutting abruptly from the sea, were sighted by Vitus Bering on St. Diomede's Day, August 16, 1728. Their hard granite was brought into relief while resisting the action of glacial ice, and with Fairway Rock are remnants of a once continuous land that united America and Asia.

"The villages are perched on the steep rocky slopes of mountains which drop at once sheer into deep water, one mountain per island," wrote Muir in 1881. "No margin is left for a village along the shore, so, like the seabirds that breed here and fly about in countless multitudes darkening the water, the rocks, and the air, the Natives had to perch their huts on the cliffs, dragging boats and everything up and down steep trails. The huts are mostly built of stone with skin roofs. They look like mere stone-heaps, black dots on the snow at a distance, with whalebone posts set up and framed at the top to lay their canoes beyond the dogs that would otherwise eat them. The dreariest towns I ever beheld—the tops of the islands in gloomy storm-clouds, snow to the water's edge, and blocks of rugged ice for a fringe; then the black water dashing against the ice; the gray sleety sky, the screaming water birds, the howling wind, and the blue gathering sludge!"

Students agree that the North American continent was peopled essentially from Northeastern Asia. It appears likely that there was no single great migration, but that small successive groups, over a long period of time, crossed Bering Strait, and "followed the sun" southward to the Alaska Peninsula. Here they found many passages with easy portages, and once over these, passage to the east and the northwest coast from the Gulf of Alaska was comparatively easy. With repeated comings, there came also differences of language and ethnic characteristics, no two of which were identical. These comers from Asia, though all of the great yellow-brown race, brought with them considerable physical variation. Apparently they had well-advanced cultures, as shown by the finding of articles belonging to the fossil-ivory culture of northern Bering Sea and the northeastern Asiatic coasts, and to the rich old culture of Kodiak Island. Through these migrations the neolithic cultures of Asia had a strong influence on later cultures of the Southwest, Mexico, and even Central and South America. Through the neolithic Indian of Asia the aboriginal peoples of the North American continent are thus descended from the Magdaelenian and Aurignacian men of northern Asia and Europe. No archeological remains of the early migrations, however, are likely to be found. Nothing so far has been discovered that would indicate a greater antiquity than the beginning of the Christian era. This is due to the fact that the land on which remains have been found are of recent formation, and that the older places where man could have lived have been crushed away or covered with silt. As the old coasts are gone (the map of Alaska has been completely altered within the last 2,000 years), sites of ancient migrations may be found on the northwest coast of British Columbia and the United States, especially along the lower basins of the Fraser and Columbia rivers.

The Eskimo appears to be an offshoot from the same old stock from which came the Indian. "The relation of the Indian to the Eskimo," writes Dr. Hrdlicka, "may best perhaps be represented by a hand with outstretched fingers. The diverging fingers are the different types of the Indian; the thumb, which should be double, represents the Eskimo. The thumb is farther apart but originates from the same hand, which is the old or Paleo-Asiatic yellow-brown strain, a strain that gave us the ancestry of all the aboriginal Americans." The Eskimo himself does not recognize any such close relationship with the Indian, whom he holds in great contempt. Captain Peter Freuchen tells of sending an Eskimo to see who was at the tent door. "Nobody," reported the Eskimo, seeing a group of Indians.

Although the Diomede Islands are less than three miles apart, Big Diomede is under the Soviet flag; Little Diomede under the American. In the Big Diomede schoolroom is a portrait of Karl Marx; in the Little Diomede schoolroom, one of Abraham Lincoln. On the Big Diomede are shown once a week movies produced by Lenfilm; on the Little Diomede, films of the Warner Brothers. The Eskimos of both islands are inter-related and large family groups from one island frequently visit the other. True to the Soviet tradition, the Big Diomede Eskimo attempt to proselytize their Little Diomede relatives. "Come, cross the water," they are reported as urging. "Here the Eskimos are allowed to lubricate the machines, cure the sick, write letters, live with Russian women, spit on merchants, go to Moscow, become captains!" The Diomede Eskimos are noted for making artistic beads from walrus ivory, and for their skill as seamen.

North of Wales, Seward Peninsula turns abruptly to the northeast. Sixty miles northeast of Cape Prince of Wales is SHISHMAREF (p.o., 223pop.). George Goshaw, postmaster, writes: "The Eskimo village of Shishmaref is on an Arctic Ocean coastline island, bordering the shores of Seward Peninsula. The northwesternmost tip of this peninsula is known as Cape Prince of Wales—likewise the cape marks the "Land's End" of continental North America. Shishmaref takes its name from the inlet waters on its southerly shores. This large indenture was named by Count Kotzebue on his first voyage of discovery in 1816, in honor of his second in command, Glieb Shishmaref. Later on, Shishmaref, in the small sailing ship *Good Intent,* sailed from Cronstadt, July 3, 1819. Rounding Cape Horn he arrived in Unalaska June 4, 1820—in 1821 he again entered Arctic waters. All these voyages marked new discoveries and new adventures and required months and years to go the distances now covered in hours and days.

"Eskimos had lived on this island as far back as memory brings its story down to this day. Even today, though possessing everything of modern manufacture, they gain their livelihood almost entirely from the waters of ocean, lake and river, and from the land. There are about 200 Eskifolk living in the village. There is a Federally maintained school, a Lutheran mission, a trading post and a fox ranch.

"For over thirty-five years mail delivery in these northern sections has been made by dog team and driver. The Dog never failed in this task; the Mail went on, regardless of weather and trail conditions. Now the Dog and Driver have arrived at the End of the Trail—the new way, the Airplane and Pilot, takes over the task. The first official mail leaves Nome about November 1, 1938, for Shishmaref. Nome on the shores of Bering Sea—Shishmaref on those of the Arctic. As the airplane rounds the northwesternmost end of the continent, it will be but 50 miles from East Cape, northeasternmost tip of Asiatic Siberia. As our daily time is measured, it will be about 40 minutes "west" of Honolulu.

"The Dog has had its day. May the Airplane and Pilot be as faithful in the discharge of mail delivery."

At Cape Espenberg are simultaneously reached the Arctic Circle and Kotzebue Sound.

10. THE ARCTIC

Deering—Candle—Kotzebue—Kobuk—Pt. Hope—Wainwright—Barrow—Eastern Siberia.

Since Arctic Alaska remains largely unexploited, transportation facilities are uncertain. At Fort Yukon (see Part II, 2) passenger steamers cross the Arctic Circle. The Koyukuk and Chandalar areas are easily reached by plane from Fairbanks (see Part II, 6). Once a year the government vessel *North Star* departs from Seattle with supplies and government personnel for Arctic coast points. Each year it makes a swift dash to the Arctic, as there are only about 15 days, usually early in September, when the ice lanes are open. Every summer the Alaska Steamship Company offers two Arctic cruises (see "Tours for 'Round-Trippers' ") on which East Cape, Siberia, is sometimes visited. Most visitors to the Arctic coast go from Nome by plane.

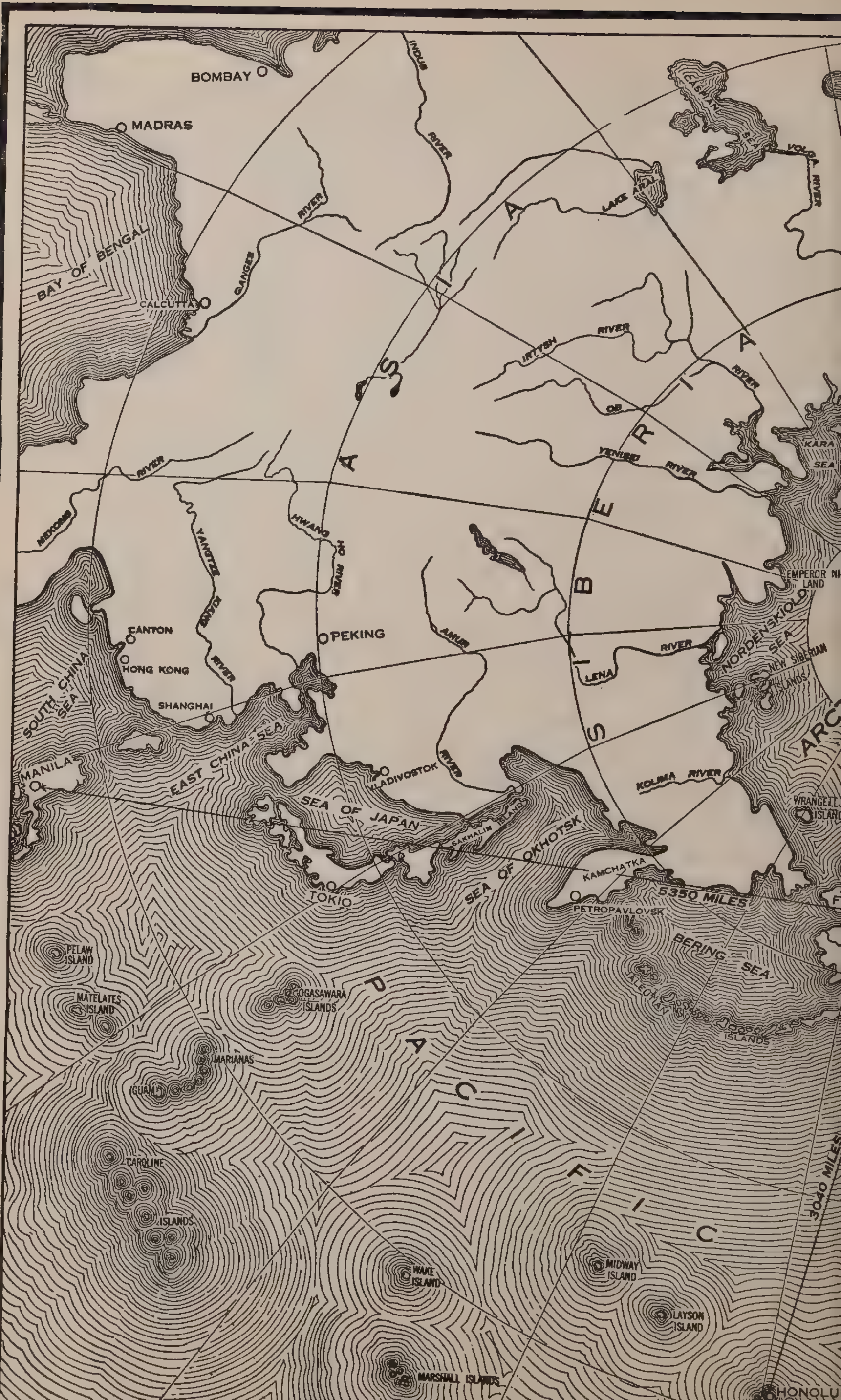
ARCTIC ALASKA includes all the region north of the Arctic Circle (66° 30′ N.) from Demarcation Point on the east, where the international boundary line between Canada and the United States touches the Arctic sea, to Siberia on the west. From the international boundary to Point Barrow the coast slopes gradually northward; from Point Barrow to Bering Strait it slopes southward. Behind it the mountains make a short cut from the Mackenzie River delta to Cape Lisburne "like an 800-mile bowstring to a 1000-mile bow of seacoast," in the phrase of Vilhjalmur Stefansson. The triangle of land north of these mountains is tundra, a low flat region covered with moss and grass and dotted with lakes and ponds. Summer travel over this country is almost impossible, so the Eskimos use river and portage routes when they go inland, following the rivers that drain the coastal plain. Many of these are not shown even on the most recent maps, or are represented only by vague dotted lines. There are no trees near the sea, but inland most of the rivers have shrub willows large enough for fuel and building materials. The Eskimos rely for most of their wood, however, on the huge cottonwood logs that drift westward along the coast. In some places the presence of fairly good surface coal makes gathering driftwood unnecessary. Formerly only a small amount of fuel was needed to heat the typical Eskimo iglu of sod and moss, but when the Eskimos began to imitate the white men by constructing flimsy "civilized" houses, seal-oil lamps became useless, and stores of driftwood that had been accumulated over generations were quickly used up. Wealthy Eskimos began to import coal from Seattle, and poor Eskimos had to travel thirty to forty miles with dogsleds for fuel.

Formerly Arctic Eskimos were divided into two fairly distinct groups: the coast dwellers and the inlanders. When the caribou, like the buffalo of our western plains, suffered practical extinction from indiscriminate slaughter by both whalers and Eskimos, the inlanders began to drift to the coast, attracted by trading opportunities and sea food.

The northern slope has a typically Arctic climate, with average summer temperatures of from 52° to 65° and ordinary winter temperatures of from —30° to —20°. In summer the temperature frequently rises to 80° or higher. At Barrow, the most northerly town of America, the sun is below the horizon for seventy-two days in the winter, and during these months the working day is limited to the hours from 9 A.M to 3 P.M. In summer the nights are so bright that no stars are visible. Snow in the Arctic is fine and scanty, and the weather is much colder and more unpleasant on the coast than inland. Rains begin in April; fog is frequent in summer; and in early November there are violent storms, with wind velocities sometimes reaching one hundred miles an hour.

Mammals inhabiting the coastal plain include wolf, fox, wolverene, marten, ermine, and lemming. Reindeer are, of course, the most abundant and important source of meat and clothing. There are some moose, brown bear, and polar bear. The most important sea animals are the seal, which yields meat, oil, and leather; the walrus, whose skin is important for making boats and tarpaulins; and the whale. The whole Arctic slope contains extensive wildfowl breeding grounds that play an important part in maintaining the wildfowl resources over a large section of continental United States. From May to August nesting robins, varied thrush, rusty blackbirds, warblers, pine grosbeaks, and fox sparrows are found on Kotzebue Sound, and the sky is darkened with flocks of ducks. In the migration of birds from North America and Asia, the Arctic has an important place, as no doubt it will have for people, when human travel comes to be by air rather than by land and water. Sea fish are plentiful, and the fresh-water streams are full of salmon, trout, and grayling. Mosquitoes are common, as also are flies, bumblebees, gadflies, and lice. The only plants of service to man are willows, catkins, and various grasses and mosses; although many flowering plants make the tundra gay in summer. North of Fairbanks along the upper Koyukuk and Chandalar are important gold districts (see Part II, 2 and 6). Coal is found between Colville and Wainwright on the Arctic slope, and oil seepages along the Arctic coast indicate an important natural wealth of petroleum, in an area set aside in 1923 as a naval petroleum reserve.

On his first voyage of discovery Vitus Bering, after sailing through Bering Strait, turned back before crossing the Arctic Circle. Captain James Cook, searching for the northwest passage in 1778, followed Bering's route and went beyond it, reaching the edge of the polar ice pack not far from Wainwright, at Icy Cape. Meanwhile explorers of the Hudson's Bay Company had been pushing westward along the Canadian Arctic coast. In 1789 Alexander Mackenzie discovered the mouth of the Mackenzie River. In the early years of the next century there followed many Arctic expeditions, among them Franklin's and Parry's, that gradually extended knowledge of the region. Between 1829 and 1847 traders of the Hudson's Bay Company explored and traced the polar shores of Alaska from east to west, and between 1820 and 1843, Russian traders pushed from west to east. Sir John Franklin's expedition left Greenland in July, 1845, and was last seen in Baffin Bay. Records were eventually found at Point Victory (69° 37′ N. lat., 98° 41′ W. long.) stating that the vessels were deserted here in April, 1848, after having been icebound since September, 1846.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PEKING
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LENA
NORDENSKIOLD SEA
NEW SIBERIAN ISLANDS
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SHANGHAI
EAST CHINA SEA
MANILA
VLADIVOSTOK
RIVER
KOLIMA RIVER
ARC
WRANGELL ISLAN
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SAKHALIN ISLAND
SEA OF OKHOTSK
KAMCHATKA
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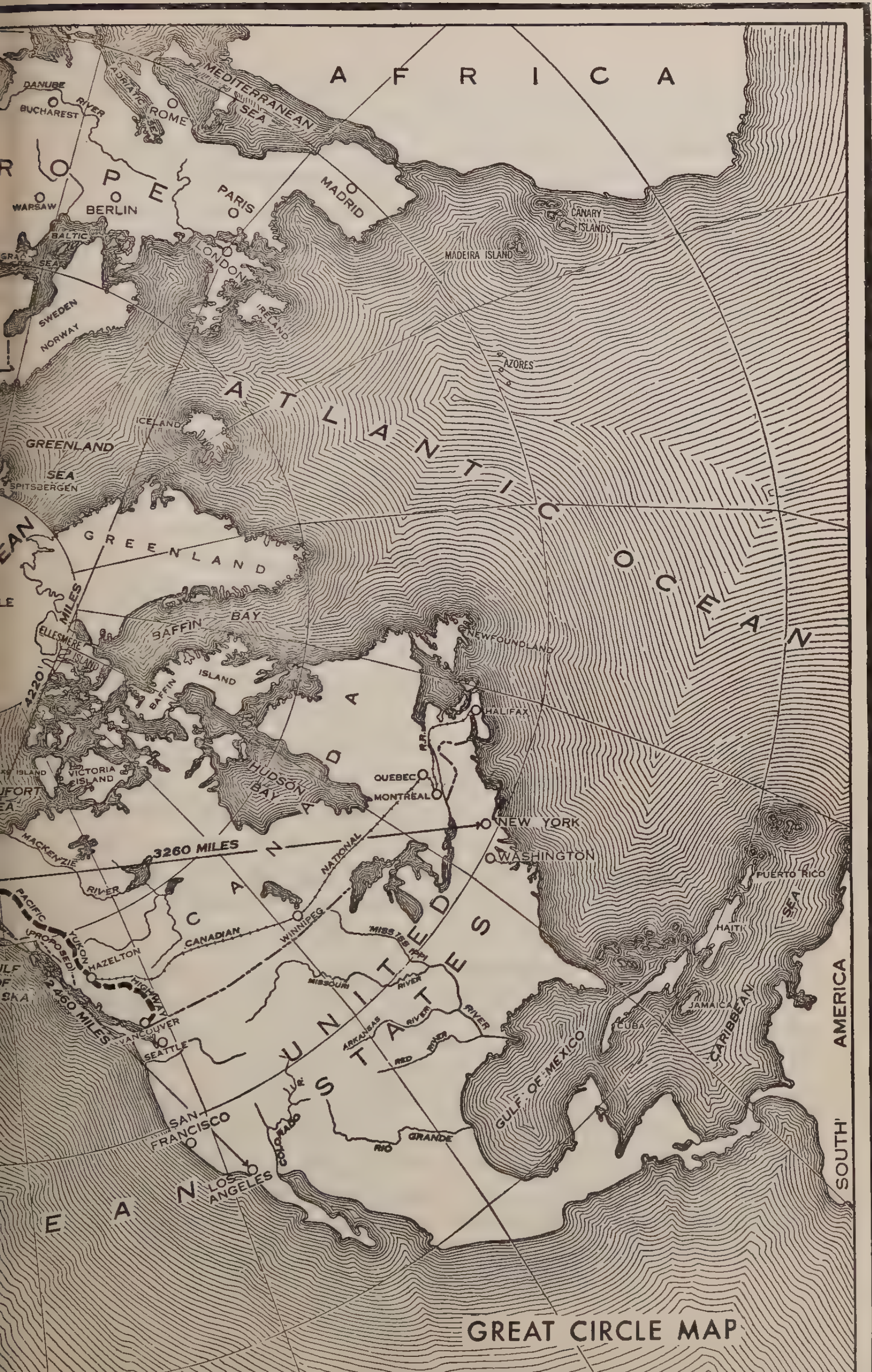
AFRICA
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ADRIATIC
ROME
DANUBE RIVER
BUCHAREST
R O P E
WARSAW
BERLIN
PARIS
MADRID
LONDON
BALTIC SEA
SWEDEN
NORWAY
IRELAND
CANARY ISLANDS
MADEIRA ISLAND
AZORES
ATLANTIC OCEAN
ICELAND
GREENLAND SEA
SPITSBERGEN
GREENLAND
BAFFIN BAY
ELLESMERE ISLAND
BAFFIN ISLAND
4220 MILES
NEWFOUNDLAND
HALIFAX
R.R.
QUEBEC
MONTREAL
NEW YORK
WASHINGTON
VICTORIA ISLAND
HUDSON BAY
CANADA
MACKENZIE RIVER
3260 MILES
NATIONAL
CANADIAN
WINNIPEG
PACIFIC YUKON (PROPOSED) HIGHWAY
HAZELTON
2460 MILES
VANCOUVER
SEATTLE
MISSISSIPPI RIVER
MISSOURI RIVER
ARKANSAS RIVER
RED RIVER
UNITED STATES
COLORADO
RIO GRANDE
SAN FRANCISCO
LOS ANGELES
GULF OF MEXICO
CUBA
JAMAICA
HAITI
PUERTO RICO
CARIBBEAN SEA
SOUTH AMERICA
E A N

GREAT CIRCLE MAP

Sir John Franklin had died in June, 1847. Between 1848 and 1854 fifteen expeditions left England and America in search for the lost ships and thoroughly explored the Arctic coast. An international polar conference in 1880 decided to establish a ring of observation stations in the Arctic, and the American stations were located in 1882 at Barrow, commanded by Lieut. P. H. Ray, and at Franklin Bay, commanded by Lieut. A. W. Greely. Greely's men exhausted their supplies and were not rescued until 1884, when the *Thetis* and the *Bear* found Greely and six of his companions alive and their records, instruments, and specimens intact. Other famous Arctic expeditions included those of Lieut. Robert E. Peary, Dr. Fridtjof Nansen, and Knud Rasmussen. In 1897 a balloon piloted by a Swede, Salomon A. Andrée, set out from Spitsbergen, but was never heard of again. Vilhjalmur Stefansson, a Canadian-American of Icelandic parentage, explored the Arctic coast extensively, beginning in 1906, and has spent thirteen winters there. Unlike most Arctic explorers, Stefansson travels light and lives off the country. At one time several members of his party were trapped on a five-mile-wide ice floe where they lived for six months. They got along comfortably enough, found plenty of food and fuel, and said that they could have managed nicely for several years. Stefansson finds that common conceptions of the Arctic are usually wrong, and his book, *The Northward Course of Empire,* has done much to change these conceptions. In 1906 Captain Roald Amundsen, a Norwegian, made the first successful voyage through the northwest passage. Since Columbus' day mariners had unsuccessfully sought a northern passage between Europe and the Orient. On the west coast of America, explorers had tried to discover a route from as far south as Juan de Fuca Strait to as far north as Bering Strait. Leaving Christiania in 1903 in the small auxiliary sloop *Gjoa,* Amundsen slowly proceeded westward. After being frozen in for three successive winters, he finally got free in July, 1906, and entered the Pacific through Bering Strait, the only one to do so since Sir Martin Frobisher first attempted the passage in 1576. In 1926 Commander R. E. Byrd flew from Spitsbergen to the north pole and back in sixteen hours; and a few days later, Roald Amundsen crossed the pole from Spitsbergen with Lincoln Ellsworth and Umberto Nobile in the Italian dirigible *Norge,* arriving at Teller in seventy-two hours after a voyage of 3,391 miles. Amundsen was later lost while searching for

General Nobile after the wreck of the dirigible *Italia*. In 1928 Capt. Hubert Wilkins and Lieut. Ben Eielson flew from Barrow to Spitsbergen in 20½ hours. Eielson later died in a crash. Sir Hubert, knighted after his flight, planned a series of explorations of the Arctic in a specially designed submarine, to begin in June, 1939. Undersea travel in the Arctic, he pointed out, would have an important bearing on national defense plans of the United States. Since 1926 a series of spectacular flights around the coasts of the "Polar Mediterranean" have been made, most of them successfully.

KOTZEBUE SOUND TO BARROW

Kotzebue Sound was discovered by Otto von Kotzebue, a Russian navigator in search of the northwest passage, in August, 1816. "In compliance with the general wish of my companions," he recorded, "I called this newly discovered sound by my own name." DEERING (p.o., 183 pop.), a mining camp on a southern bay of the sound at the mouth of the Inmachuck River about 150 miles northeast of Nome, is a placer gold-mining district. It has a Native school and two stores. KIWALIK, at the mouth of the Kiwalik River, is a seaport with a good harbor, connected by road and telephone with CANDLE (p.o., 85 pop.), in the center of the Candle Creek placer gold district. The village was so named by miners who settled it in 1901, from a scrubby bush growing locally that burns like a candle and is used by the Eskimos to light their homes. Tex Rickard, the promotor, made his stake as a gambler and saloonkeeper in Candle. Gold rushes took place in 1901 and 1906, and the town has been the scene of numerous fights and claim jumpings, and periodic disastrous fires. Although the 1930 census gives Candle a population of 85, a local estimate in 1938 puts it at 546. There is a Territorial school, a Swedish Covenant church, a garden and 4H clubs, and a radio station (KAKR). A municipal airport across the Kiwalik River is served by three airlines. Room and board cost only $2.50 a day at Rousts Roadhouse or the Candle Hotel, and a dog team may be hired for $15 a day. Near-by streams, with a temperature seldom higher than 45°, contain many trout, grayling, and salmon; there is good hunting for bear, caribou, walrus, and smaller game animals and birds. An annual reindeer roundup takes place in August. Near by at Elephant Point in natural cold storage are deposits of prehistoric mammals and fossil ivory. Several mining companies carry on interesting operations during the summer, leading water for mining through fifty miles of ditch in the ice.

The August reindeer roundup, an important event in the life of the Eskimos, takes place annually with slight variations in Arctic villages from Candle to Barrow. Herds of as many as 2,000 head are driven into corrals, where the animals are shot with rifles. After the carcasses are dressed, they are stretched out, heads down, on racks in the open air to cool. Next day they are sewn into canvas for shipping. Some of the meat is sold in Alaska and some in Seattle. The hides are sold through Native cooperative stores owned and managed by the Eskimos themselves. From the hides are made mukluks, parkas, mittens, socks, pants, inside parkas, and caps. Stillborn and unborn fawns yield the prized fawn skins, which are soft and light, yet warm.

BUCKLAND (p.o., 104pop.) is east of Kiwalik on Eschscholtz Bay. SELAWIK (p.o., 304pop.) is an Eskimo village on the Selawik River, inland from Cape Blossom. It is a center of fox and mink raising. The Natives trap, hunt, fish and have a small reindeer herd. There is a Federal school and a Friends mission here and a government nurse spends one month each year in the village. The name was given by members of the Franklin searching expeditions about 1850. KOTZEBUE (p.o., 405pop. est. 1938), about 350 miles by steamer from Nome, has no harbor, and as the water is very shallow, passengers are taken 15 miles from the anchorage to the village by launch. The village lies around a point on a low flat bank facing a bay of three rivers and has a number of frame houses and, in summer, many tents of visiting Interior Eskimos. There is a Federal school, a Catholic mission, a Friends mission, four stores, and three large fur farms. Near by is the old Eskimo village of Kikitaruk, or Kikiktak. Kotzebue is the home port of at least two planes. Across Hotham Strait from Kotzebue is NOORVIK (p.o., 198pop.), where there is a government hospital for Natives. It was at Noorvik that Rockwell Kent met Twok, the Eskimo artist, whom he describes as "unique, not only in that he is probably the only professional artist of the Far North but in that his limited range of experience and physical handicap have made him a ranking artist." Twok, whose Christianized name is George Allen Ahgupuk, was born at Shishmaref in 1912. In his early teens he met with an accident which crippled him for life. Debarred from the normal pursuits of trapping and fishing, he turned to art. His line drawings on tanned reindeer hide depict scenes in Eskimo life with spontaneity and considerable humor, and skillfully take advantage of discolorations and markings in the hide to give depth to the drawing. A large drawing by Twok is on display in the lobby of the Hotel Anchorage at Anchorage, and examples may be occasionally found in curio shops.

At the junction of the Kobuk and Squirrel rivers is KIANA (p.o., 115pop.), a small but important town, with a new $9,000 Territorial school and three stores. Kiana is a supply depot and transfer point for mining camps up the river, particularly the mines on Klery Creek —a branch of the Squirrel. The region has been well known to prospectors since 1898, and in 1910 there was a mild stampede. But transportation difficulties and the severity of the climate impeded development until the widespread use of the plane and modern mining methods. At the head of navigation on the Kobuk are KOBUK (p.o.) and SHUNGNAK (213pop., est. 1938), with a Native school and a Friends mission. The name is said to be a Native word for jade, which is found in the district. A nugget worth six hundred dollars was once found in this placer gold region. With the recent construction of an airplane landing field, the district has been made more accessible, but it still contains virgin areas worth prospecting. NOATAK (212pop.) is an Eskimo village on the lower part of Noatak River. KIVALINA (99pop.) is a small Native village with a few sod houses at the mouth of the river of the same name. These sod iglus when covered with snow in winter look rather like the legendary Eskimo snow houses of the story books.

At the approach of winter, Eskimos living in tents desert them and begin to build winter iglus, not unlike the sod houses of Dakota pioneers. First they dig up an area 10 by 12 feet, and about a foot in depth. They next place rafters of driftwood, willow sticks, or whale ribs in the cavity. The house is then covered with cut sods. The roof is often further protected by the skin of the ugruk, or sea lion, as a protection against blizzards and driving rain. Each iglu has windows cut in its sides with seal-gut panes, giving a dull yellow light. A stovepipe projects through the roof, and there are tiny wooden ventilators left open or closed, according to the weather.

The iglus are entered through long tunnels of similar construction, with a heavy windproof reindeer skin at the door. These tunnels also serve as storerooms for extra food and clothing, and sometimes in bad weather shelter a husky mother and her puppies. The walls are lined with packing-box sides, driftwood, sheets of newspaper, or sometimes oilcloth. There are no chairs, and the table is usually a board a few feet square, sometimes with short legs. The beds, kept in the tunnel when not in use, are simple sleeping bags or reindeer skins. The only essential article of furniture is the stove—a stone seal-oil lamp, its wick a piece of twisted string or moss. Instead of a lamp, the stove may be a five-gallon gasoline can, a more elaborate affair made of a large gasoline drum, or perhaps even a genuine store stove, for which many precious fox skins have been traded. According to season and geographic location, driftwood, blubber, surface coal, or even green willow sticks are burned. Very little fuel is necessary to heat an iglu, but blubber and driftwood are becoming scarcer each year.

Point Hope (p.o., 258 pop. est. 1938) was named by Beechy in 1826, for Sir William Johnstone Hope. The post office is now listed as Tigara, an Eskimo name meaning "forefinger." It is the site of an Episcopal mission and has a Native school and a store. There is a good landing field, and the village is easily accessible from Fairbanks, Nome, or Kotzebue. There are no commercial accommodations, but meagerly furnished quarters may be rented for a small sum. Visitors are usually cared for by the teacher in the Native school. There is salmon fishing in season, and seal herd on the "forefinger"—a low, sandy and grassy spit extending far out into the ocean. Polar and grizzly bear, mountain sheep, caribou, and walrus are hunted in the district. Half a century ago Point Hope was the winter-supply station for whaling vessels, and whale hunting from Native skin-boats with hand tackle—the rarest and finest sport on the American continent—is still possible here for two and a half months during the spring. About June 10 the catch of the season is celebrated in the Native whaling feast: Nullikuttuk. At one time this was an Eskimo village of perhaps 2,000; and old ruins of this early settlement are constantly washing out upon the beach. A later village of over one hundred large houses stands on ground that is being rapidly washed away. Here whalebones replace wood for almost every use. A road from the mission to the school is staked out with whale ribs, and the cemetery is enclosed with a neat whale-rib picket fence. Point Hope is the home of Harold Rock, or Skivoan Wuyahok, an

Eskimo painter and sculptor of Arctic subjects, whose work attracted attention at the University of Washington, where he was a student, in 1937. During the summer months excursions may be made from the village to the rookeries on Cape Lisburne, or Cape Thompson, cliffs where the air is darkened by the flight of birds.

Northeast of Cape Lisburne, at CORWIN, named by Captain Hooper of the revenue cutter *Corwin* in 1880, and at THETIS, named for the U.S.S. *Thetis,* which coaled here in 1889, are important deposits of coal. The *Thetis* participated in the rescue of Greely's expedition in 1884, and the *Corwin* (equipped at the expense of James Gordon Bennett, proprietor of the *New York Herald*), in a search for the *Jeannette,* was lost in the Arctic in 1879. During the summer of 1881 the *Corwin* visited many points in Arctic Siberia and Alaska, and cruised along the edge of the great ice pack surrounding the Pole. WAINWRIGHT (p.o., 197pop.), named by Beechy in 1826 for a lieutenant of his party, has a Native school and a store in the midst of many Eskimo iglus. In summer it is frequently hidden by fog "thick enough to lean against," and the near-by waters, full of ice floes, are the graveyard of many ships. The oily shale on the beach indicates the presence of petroleum, and ashore on the tundra grow flowers, grasses, and mushrooms. This Arctic village, like the others, though bleak, is far from drab. The many flowering plants, the gorgeous colorings of the sky during the long twilights, the northern lights, adorn the land and sky with stains of amber, apricot, lavender, Nile green, reds, yellows, and blues, in infinite shadings.

BARROW (p.o., 330pop.), the northernmost town of Alaska, 800 miles northeast of Nome but only six and a half hours away by air, stretches for two miles along a low shore, in three clusters, the two larger ones separated by a lagoon. POINT BARROW, 12 miles north of Barrow, has an entirely Native population of eighty-two. The trading center for the entire Arctic coast that stretches hundreds of miles eastward, Barrow has two stores, a Native school, a Presbyterian mission and a Federal hospital.

The sizable village was called Nuwuk ("the point") by its Eskimo inhabitants when it was first visited by white men in 1826; Captain Beechy renamed it Barrow after Sir John Barrow, who succeeded in 1818 in having Parliament offer an award of £20,000 to the mariner making the northwest passage, and who throughout his life was responsible for the encouragement and outfitting of many polar expeditions, including Franklin's and Parry's. In 1837 Simpson and Dease, of the Hudson's Bay Company, traced the coastline from the mouth of the Mackenzie to Point Barrow or Cape North. After the failure of Sir John Franklin to make the northwest passage in the *Erebus* and *Terror* in 1845, and the loss of the expedition, many American and British relief expeditions made better known the northern Arctic slope of Alaska. American whalers began to penetrate this region after the 1870's, and their vessels were frequently locked fast in the ice, sometimes resulting in the loss of the whalers and the putting out of relief expeditions, one of the most famous of which was the cruise of the U.S. revenue cutter *Bear* and the overland expedition of her party in 1897-8. With the whalers came white men's goods, and trade with the Eskimos was constant from the Bering Straits on the west to the mouth of the Mackenzie River on the east. Barter Island, on the 144th parallel, is still a gathering point for Eskimo traders; and there is a trading post at the mouth of the Kuparuk River, near the 149th meridian.

Since 1926, when the *Norge* reached Barrow on its flight over the north pole from Spitsbergen to Teller, most of the exploration of the region north of Barrow has been by air (see Part I, Transportation). Casualties have marked some of these flights, and Eskimos living at remote points have assisted in the search for missing fliers. Two Eskimos discovered the bodies of Wiley Post and Will Rogers when they crashed near Barrow in 1935, and received as their reward the extraordinary gift they requested—two bicycles. Eskimos at Barter Island told pilot Bob Randall in August, 1937, that they had heard the roar of a plane overhead. This may have been the great red and blue four-motored monoplane of the Russian fliers who disappeared on August 13, on a flight from Moscow to Fairbanks.

The Barrow region lies in the midst of Arctic tundra, with a subsoil, permanently frozen, of sand and gravel, and with a clay topsoil. Near the coast this topsoil thaws to a depth of from three to nine inches, and hardy vegetables can be grown on it, especially with the addition of loam. At Barrow's front door is the Arctic ice pack. In October patches of ice begin to form on the Arctic Ocean, rapidly increasing in size until they become "pancakes." The pancakes extend and solidify into great sheets of ice or floes. The floes, pushed by the wind and the pressure of the permanent polar ice pack, groan, surge, and buckle, throwing up peaks and projections in their midst. Millions of tons of ice are pushed up on the beach and deposit a great pressure ridge there—a wall of ice along the whole Arctic coast, varying in height from a few feet to several hundreds of feet.

Barrow itself consists of ten or twelve frame houses with red roofs, a white church with a steeple, and numerous Eskimo frame huts, tents, and iglus. Behind it lies the limitless Arctic tundra, gay with wild flowers and berries in summer, bleak and white in winter. East for 450 miles stretches the Arctic coast, uninhabited save for a few Eskimo villages and trading centers. On Barrow's left is Siberia, on its right Arctic Canada and Greenland. Facing it are Leningrad, Stockholm, Oslo, and London—on the other side of the Polar Mediterranean, the last of the northern hemisphere's great inland seas to await the coming of industrial civilization.

AN ARCTIC NEIGHBOR

Alaska's largest Arctic neighbor is Siberia. Half the coastline of the Arctic Ocean, or about 6,000 miles, belongs to the USSR. As in Alaska, the Siberian taiga, or forest belt, gradually gives place to the treeless tundra, covered with moss and shrubs, extending from north of the Arctic Circle to the Arctic Ocean. Under the direction of the Northern Sea Route Administration (a kind of socialist Hudson's Bay Company and British East India Company rolled into one) a spectacular attempt is being made to establish a sea lane for year-round navigation of the Arctic Ocean, and at the same time develop all of the Soviet Arctic. In 1933 the first Russian ship made the journey around the Arctic Ocean in a single season, and in 1937 no less than twenty ships made the complete journey from Murmansk or Archangel to Vladivostok in one direction or the other, from northern Europe around East Cape and Bering Strait into the Pacific. Experiments are being made in raising wheat and oats in the Arctic. The Administration has watched with interest the use of reindeer by the United States government as a source of food and clothing for the Natives, and is conducting experiments along the same line.

Special cultural work is being done among the Natives. In 1938 an Eskimo named Taian, a mighty hunter, an able bookkeeper, and a good mechanic, was named governor of Wrangel Island, and his wife became the operator of the radio station. Many Natives retain their belief in spirits. "Perhaps the spirits are in the machines and the gasoline," they argue. "The Shamans say these spirits can stay alive many centuries, and sleep underground. Which is right? The Shaman or the Soviet Encyclopedia?"

Whichever is right, the rapid development of the Polar Mediterranean during the present generation seems assured. Agricultural civilization that started some thousands of years ago in subtropical climes, and industrial civilization that did not get well under way until about a century ago have met, fused, and conquered new lands here at the top of the world. And Alaska, from being the United States' last frontier, is perhaps destined to become the first frontier in a new civilization north of time.

BOOKS ABOUT ALASKA

The books here listed are a few among the thousands of volumes written about Alaska in English that are of interest to the general reader. Serious students of Alaska or persons interested in some phase or region are referred to Judge Wickersham's monumental bibliography (see below). The Superintendent of Documents, Washington, D.C., will furnish on request a list of government publications in print relating to Alaska. Most of these are highly specialized.

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Part I

Sections concerning the present-day resources of Alaska and the Territory's place in the national economy are based on the staff reports published by the National Resources Committee in *Alaska—Its Resources* (Washington, D.C., 1937), to which readers are referred. These staff reports, parts of which have been quoted verbatim, represented only the views of their authors. Still less, as used here, do they in any sense represent the opinions of the National Resources Committee. *General Information Concerning Alaska* (Washington, D.C., Interior Department, 1929, out of print), *Glimpses of Alaska* (Juneau, Alaska, Territorial Chamber of Commerce, 1938), and various reports of Federal agencies have been freely drawn upon.

In addition to these general sources, material used in PRELIMINARY INFORMATION was taken from *Regulations Relating to Game, Land Fur Animals and Birds in Alaska* (Washington, D.C., Alaska Game Commission, 1938), *Big Game Hunting Along the Alaska Railroad* (published by the Alaska Railroad), *Annual Reports of the Bureau of American Ethnology* (Washington, D.C., Smithsonian Institution), and information furnished by travel agencies. The idea of listing some POPULAR ERRORS about Alaska is due to the writings of Vilhjalmur Stefansson. TOURS FOR "ROUND-TRIPPERS" is from information furnished by travel agencies. ALASKA COMES OF AGE is based on talks with Alaskans and contemporary Alaska newspapers supplemented by the discussion of the economic development of Alaska made by the Alaska Resources Committee, paragraphs of whose staff reports have been frequently incorporated verbatim.

HISTORY follows in broad outline Clarence L. Andrews, *History of Alaska* (Caldwell, Idaho, Caxton Printers, 1932); Jeannette Nichols, *Alaska Under United States Rule* (Cleveland, Ohio, Arthur H. Clark Co., 1924); Henry W. Clark, *History of Alaska* (New York, Macmillan Co., 1930); F. A. Golder, *Russian Expansion on the Pacific 1641–1850* (Cleveland, Ohio, Arthur H. Clark Co., 1914); and F. A. Golder, *Bering's Voyages*, 2 vols. (New York, American Geographical Society, 1923–25). These were supplemented by W. H. Dall's essay in *The Harriman Alaska Expedition 1899* (New York, Doubleday, Page & Co., 1901–14); James Wickersham, *Bibliography of Alaskan Literature 1724–1924* (College, Alaska, University of Alaska, 1927); *Compilation of Narratives of Explorations in Alaska* (Washington, D.C., United States Military Affairs Committee, 1900); and contemporary accounts published in the *New York Times,* the *New York Tribune,* and the *London Times.* The discussion of Alaska newspapers and the discovery of Alaska by fiction writers is drawn from the preface to Wickersham's *Bibliography.*

THE PEOPLE is based on reports of the *Fifteenth Census, Alaska—Its Resources,* and *Indians at Work* (Washington, D.C., Office of Indian Affairs, Jan., 1937). GOVERNMENT is based on *Glimpses of Alaska, Alaska—Its Resources, Annual Reports of the Governor* (Washington, D.C., Government Printing Office) and J. A. Hellenthal, *Alaskan Melodrama* (New York, Liveright, 1936); COMMERCE, on *Statistical Abstract of the United States* (Washington, D.C., Government Printing Office, 1938), *United States Customs Service Report* (Juneau, Alaska, 1938), and *Alaska—Its Resources,* THE SIX ALASKAS, NATURAL WEALTH, TRANSPORTATION, COMMUNICATION, and NATIONAL DEFENSE are almost wholly based on the staff reports of *Alaska—Its Resources,* which here again have been frequently incorporated verbatim. Readers wishing to acquaint themselves further with the physical, social, and economic conditions of Alaska are referred to this exhaustive report.

Part II

The general background for each of the hundreds of localities described in Part II was secured from accounts of early voyages, travelers' narratives, reports of various government agencies, contemporary newspapers and magazines, and the standard sources. Baker's *Geographic Dictionary of Alaska* (Washington, D.C., U.S. Geological Survey, 1906) usually furnished information as to the early history of the area and its name, which was checked with the *Sixth Report of the United States Geographic Board, 1890 to 1932* (Washington, D.C., Government Printing Office, 1933) and supplements. Exact location was checked on the latest maps of the United States Geological Survey and compared with the *U.S. Official Postal Guide,* for 1937 and supplement for 1938 (Washington, D.C., U.S. Post Office Department). Information obtained from the Fifteenth Census and local agencies was checked with the *Alaska Directory and Gazetteer* (Seattle, Washington, Alaska Directory and Gazetteer Co., 1932) and supplemented by recent information secured from the locality through a questionnaire. Special editions of Alaska newspapers—such as the Progress and Development Edition of the *Juneau Daily Empire,* the Goldfields Edition of the *Fairbanks News-Miner,* and the Progress Edition of the *Anchorage Daily Times*—contained valuable descriptive matter contributed by local residents or authorities in various fields, as did back files

(1935–38) of the always entertaining and extremely informative *Alaska Sportsman* (Ketchikan, Alaska).

The Inside Passage. To readers wishing to make a thorough acquaintance with the Inside Passage, almost foot by foot, is recommended W. W. Woollen *The Inside Passage to Alaska 1792–1920* (Cleveland, Ohio, Arthur H. Clark Co., 1924) which retraces Vancouver's voyage of 1793–95. Frequent use has been made of this idea in The Inside Passage. The account of surveying the boundary line was contributed by Thomas Riggs, Jr., to the *National Geographic Magazine,* July, 1909. The story of tunneling under a glacier is condensed from "Glacier Gold" (*Alaska Sportsman,* August, 1937). Descriptions of the cooperative village of Metlakatla and of Wrangell Institute are from *Indians at Work.* The account of the first missionaries at Wrangell is from *Amanda R. McFarland, Pioneer* (Board of National Missions, Presbyterian Church, New York), supplemented by contemporaneous items in the *New York Times.* The discussion of totems, and of Tlingit and Haida customs is based on papers published in the *Annual Reports of the Bureau of American Ethnology.* The story of the Stikine Chief, the description of Stikine River glaciers, and the Glacier Catechism, are from John Muir's *Travels in Alaska* (Boston, Mass., Houghton Mifflin Co., 1915). The paragraphs regarding fur farming are condensed from an article by Earl H. Ohmer, "The Future of Fur Ranching" (*Alaska Sportsman,* July, 1937). The description of the Chilkat blanket is from the Progress and Development Edition of the *Juneau Daily Empire* and literature contributed by the Territorial Museum (Juneau, Alaska). The discussion of the Alaska Juneau Gold Mine is condensed from articles published in the *Engineering and Mining Journal,* September, 1932 (New York, McGraw Hill). The material relating to Sitka was drawn principally from Clarence L. Andrews, *Story of Sitka* (Seattle, Washington, The Author, P.O. Box 1088, 1922) supplemented by contemporary issues of the *New York Times* and present-day information contributed by local agencies.

The Yukon Trail. Information concerning Yukon Territory is taken chiefly from publications of the Interior Department, Ottawa—*The Yukon Territory* (1909 and 1926) and *Yukon, Land of the Klondike* (1930)—supplemented by the White Pass & Yukon Route publication, *Alaska, Atlin and the Yukon.* Sentences describing the Chilkoot Pass are taken from the article by Gen. Frederick Funston published in *Scribner's Magazine,* November, 1896. The account of building the White Pass & Yukon Railway is from *Grit, Grief and Gold,* by Dr. F. B. Whiting (Seattle, Wash., Peacock Publishing Co., 1933). Early descriptions of the country are also supplied by Lieut. Frederick Schwatka, *Military Reconnaissance in Alaska* (Washington, D.C., Military Service Institute, 1885), *Along*

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GLACIER COUNTRY AND THE COPPER RIVER RAILROAD. Information concerning glaciers and glaciation, here as elsewhere, is based on Tarr and Martin, *Alaskan Glacier Studies* (Washington, D.C., National Geographic Society, 1914), to which readers interested in this subject are referred. The story of glacier climbing with a dog is condensed from John Muir's *Travels in Alaska* (Boston, Mass., Houghton Mifflin Co., 1915). The description of Lituya Bay is based on "Lituya, the Bewitcher" by Jay Williams (*Alaska Sportsman,* Feb., 1938). The diary of Swanson, found by Trefzzer and Jastraw, was printed in the *Alaska Sportsman,* Sept., 1937, as "Dead Man's Diary."

THE RICHARDSON TRAIL. Captain Abercrombie's account of Valdez and of crossing the glacier, and many details concerning early conditions along the route, are from United States Military Affairs Committee, *Compilations of Narratives of Explorations in Alaska* (Washington, D.C., Government Printing Office, 1900). These have been supplemented by Neal D. Benedict, *The Valdes and Copper River Trail* (copyright 1899, not printed) and back files of the *All Alaska Review* (Cordova, Alaska). The tour follows closely *A Travelogue of the Richardson and Steese Highways,* a publication of the Alaska Road Commission. Otto Geist's account of Black River Glacier is condensed from the Goldfields Edition (1937) of the *Fairbanks News-Miner,* as is the description of American bison, contributed to the *News-Miner* by Irving McK. Reed of the Alaska Game Commission.

BY RAIL TO THE INTERIOR. The tour follows closely *The Alaska Railroad, Mt. McKinley Park Route Travelogue* (U.S. Department of the Interior). The description of Columbia Glacier is based on Tarr and Martin, *Alaskan Glacier Studies* (Washington, D.C., National Geographic Society, 1914). Sam Gamblin's adventure is described in "Lost Mine" (*Alaska Sportsman,* Dec., 1936). The story of Seward is based on information gathered from the Progress Edition (1937) of the *Anchorage Daily Times,* files of the *All Alaska Review* and the *New York Times.* Information regarding the Alaska Railroad is taken from *Alaska—Its Resources.* The story of Anchorage and the geological history of Anchorage and vicinity are from the Progress Edition (1937) of the *Anchorage Daily Times.* The account of Eklutna is from *Indians at Work* (Office of Indian Affairs, 1937). Information regarding Palmer was gathered chiefly from the files of the Alaska Rural Rehabilitation Corporation. Some events in the recent history of the district are from the *Matanuska Valley Pioneer,* a weekly newspaper now extinct and replaced (1939) by a mimeographed bulletin written and circulated by the colonists themselves. The stories of Scotty Douglas and Sourdough Sam are condensed from the *Matanuska Valley Pioneer* and the account of Mrs. V. Johnson, from an article written by her for the *Anchorage Daily Times.* The description of Mt. McKinley National Park is condensed from the bulletin about the park published by the National Park Service (Washington, D.C., Government Printing Office, 1938).

THE GOLDEN HEART. Much of the information regarding Fairbanks is from the back files of the *Fairbanks News-Miner,* a daily newspaper which visitors to Fairbanks should not fail to purchase; some details in the early history of the town are from the files of the *All Alaska Review.* The account of drift mining, the description of panning and advice to prospectors are all taken from the Goldfields Edition (1937) of the *Fairbanks News-Miner.* Fairbanks to Circle along the Steese Highway follows closely *The Richardson and Steese Highways, A Travelogue* (the Alaska Road Commission).

TO THE WESTWARD. For the description of this tour much valuable first-hand information was contributed by the captain and purser of the steamship *Starr.* The ancient life of the Aleut, now almost entirely disappeared, was so well described by Martin Sauer, *Billings' Voyage* (London, T. Cadell, 1802), and G. A. Sarychev, *Voyage of Discovery* (London, R. Phillips, 1806), that excerpts are repeated here without change. The account of the explosion of Mt. Katmai is based on reports appearing in the *New York Times* and R. F. Griggs, *The Valley of Ten Thousand Smokes* (Washington, D.C., National Geographic Society, 1922). Father Hubbard describes Mt. Shishaldin in *Mush, You Malemutes* (New York, America Press, 1932). Some of the descriptions of Attu and beyond are based on the account of the most recent traveler to give a written record, Will Hudson, author of *Icy Hell* (New York, F. A. Stokes

Co., 1938). *Alaska and the Seal Islands* by Henry W. Elliott (New York, Charles Scribner's Sons, 1897) supplemented by recent publications of the Federal Bureau of Fisheries is the source of information regarding the Pribilof Islands. The doggerel which Muir attributes to Burroughs is from *John of the Mountains* (Muir's posthumous works, Boston, Mass., Houghton Mifflin Co., 1938).

BRISTOL BAY AND THE KUSKOKWIM COUNTRY. The information in this section is based chiefly on personal observation and information condensed and simplified from "The Sluice Box," a highly specialized department of the *Alaska Sportsman.*

SEWARD PENINSULA. Much of the information concerning Nome and vicinity is taken from *Nome, Alaska* (Nome, Northwestern Alaska Chamber of Commerce, 1932). The history of Nome is chiefly from the back files of the *New York Times,* supplemented by Alaska newspapers. The discussion of the Eskimo is based on the most recent compendium of information about Greenland Eskimos, Birket-Smith, *The Eskimo* (New York, E. P. Dutton & Co., 1936) which anyone interested in anthropological studies is advised to consult and the 1880 report of Ivan Petrof (*Compilation of Narratives of Exploration*). This information has been supplemented by the work of Ales Hrdlicka (*"Anthropological Survey of Alaska,"* 1930, and *"Coming of Man from Asia,"* 1936: Annual Reports of the Bureau of American Ethnology) and advice from H. B. Collins of the Smithsonian Institution, both of whom have dealt more specifically with the Alaska Eskimo. The discussion of St. Lawrence Island is from H. B. Collins, *Archeology of St. Lawrence Island* (Washington, D.C., Smithsonian Institution, 1937), and O. W. Geist, *Archeological Excavations at Kukulik* (Washington, D.C., Government Printing Office, 1936). The description of whaling ceremonies is from "Eskimos Hunt Whale Ceremoniously" by N. Leighton-Smith (*Alaska Sportsman,* Oct., 1937). A full account of the last battle of the Shenandoah will be found in "War's End in Bering Sea," by Robert N. De Armond (*Alaska Sportsman,* July, 1937). Information regarding reindeer is taken from *Alaska—Its Resources, Nome, Alaska.* The account of dog racing is from "Men of Iron, Dogs of Speed" by V. A. Braafladt (*Alaska Sportsman,* Dec., 1937). The discussion of the origin of the Eskimo is condensed from Ales Hrdlicka, *The Coming of Man from Asia* (report to the Smithsonian Institution, 1935). The discussion of the Diomede Islands is condensed from the article "America Our Neighbor," by Lapin and Khatzrebin (printed in a Russian language publication, Moscow, 1932).

THE ARCTIC. This region is described in numerous reports of the Bureau of American Ethnology and in works by Vilhjalmur Stefansson (*The Friendly Arctic,* New York, Macmillan Co., 1921, and *The North-*

ward Course of Empire, New York, Harcourt, Brace & Co., 1922). *Nome, Alaska* (Northwestern Alaska Chamber of Commerce) contains valuable information about the Arctic, as do old issues of the *National Geographic Magazine.* The account of a reindeer roundup, given in this section, is condensed from "Arctic Round-Up" by Lona E. Morlander (*Alaska Sportsman,* Dec., 1936). The description of Eskimo clothing and shelter is from the same writer's "Inside an Igloo" (*Alaska Sportsman,* July, 1937). Facts about Kivalina and its environs are condensed from Bertha Taber's "Public Nursing at the top of the Continent." (*Alaska Press,* April 4, 1937). Facts concerning Arctic Siberia are from the article by Professor Cressay "News from Siberia" (*Harper's Magazine,* July, 1938), and H. P. Smolka, *Forty Thousand Against the Arctic* (London, Hutchinson & Co., Ltd., 1937).

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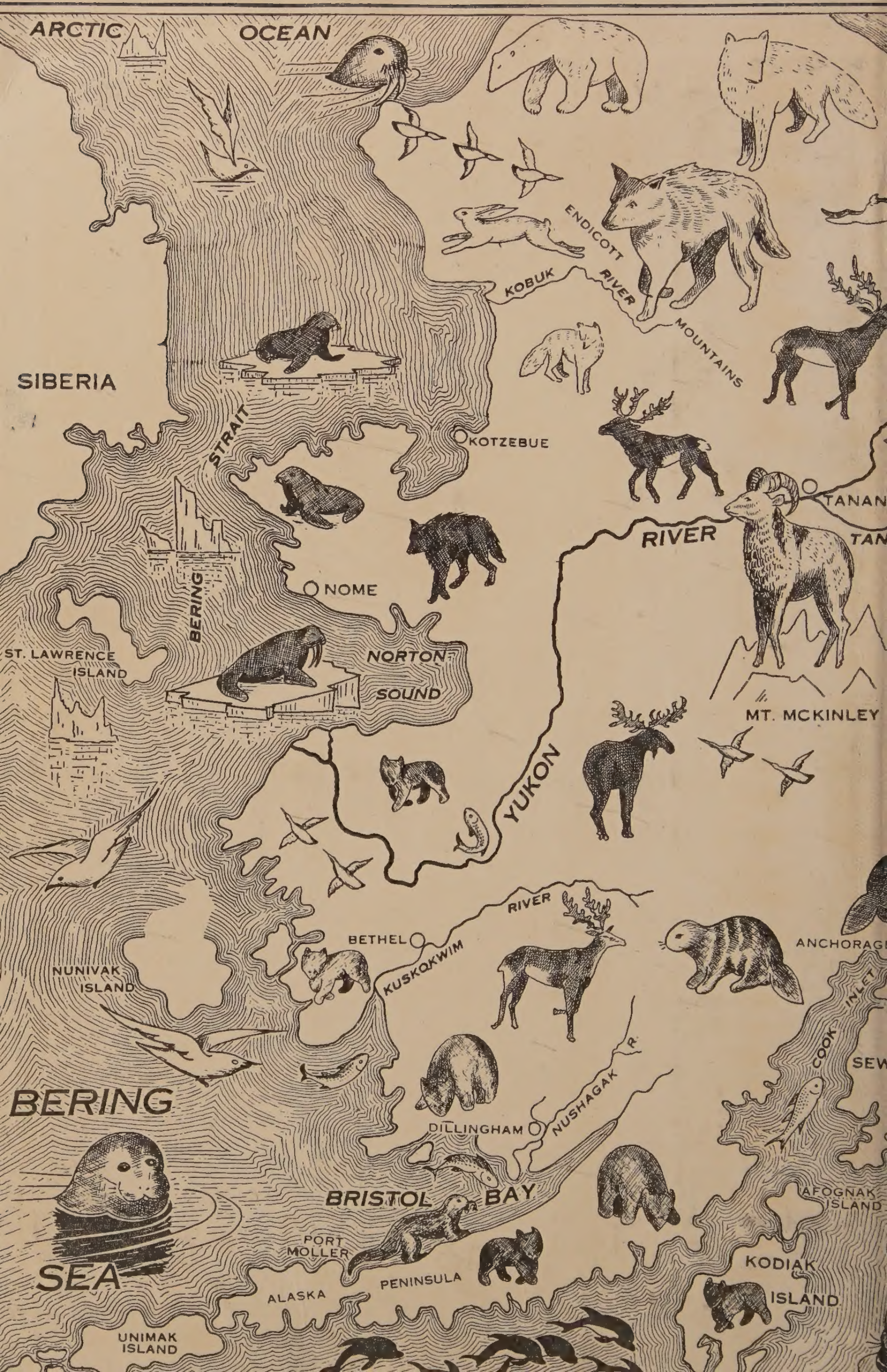
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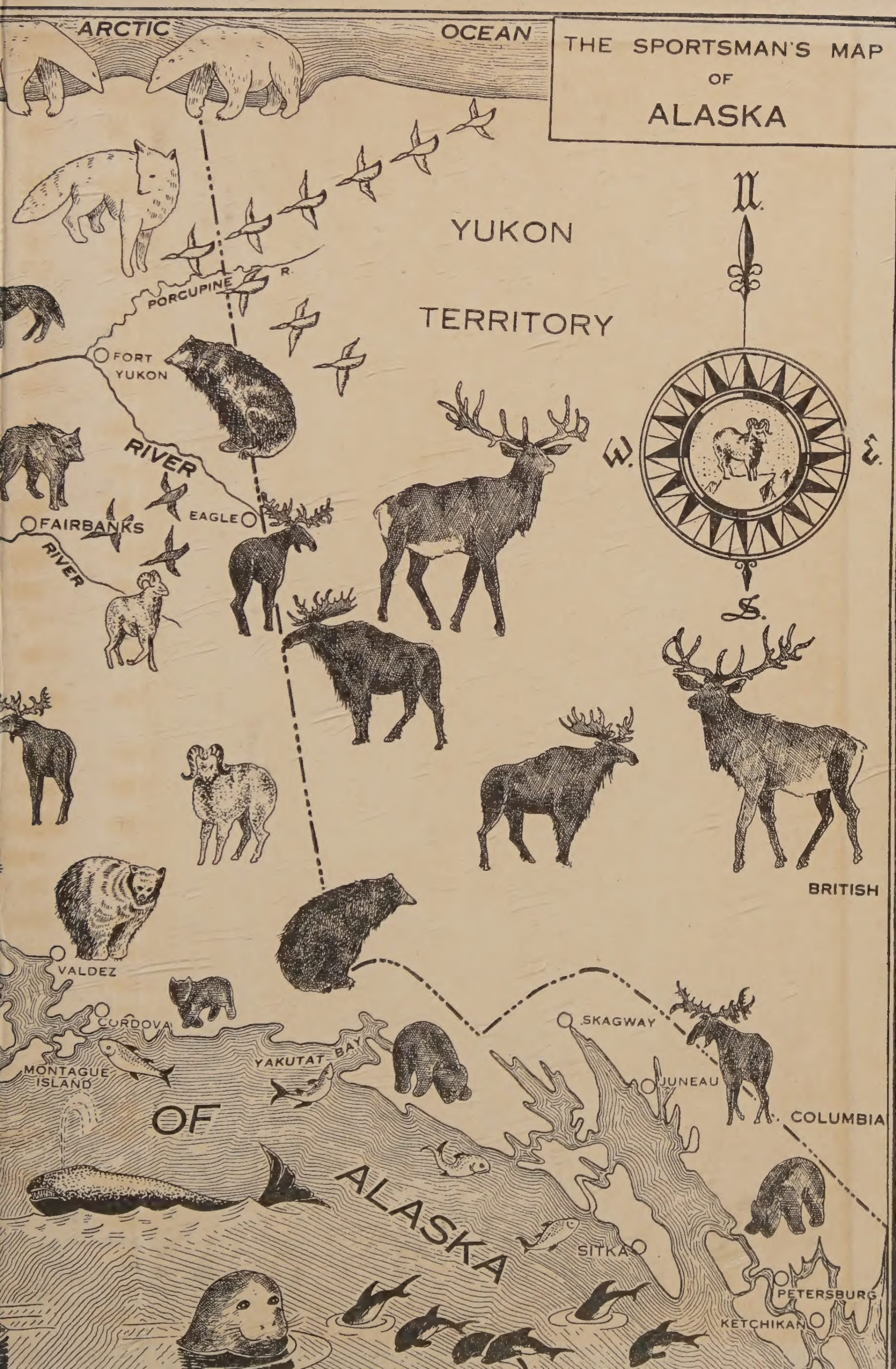
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